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The publications of the United States Geological Survey are issued in accordance with the statute, approved March 3, 1879, which declares that—

"The publications of the Geological Survey shall consist of the annual report of operations, geological and economic maps illustrating the resources and classifications of the lands, and reports upon general and economic geology and paleontology. The annual report of operations of the Geological Survey shall accompany the annual report of the Secretary of the Interior. All special memoirs and reports of said Survey shall be issued in uniform quarto series if deemed necessary by the Director, but otherwise in ordinary octavos. Three thousand copies of each shall be published for scientific exchanges and for sale at the price of publication; and all literary and cartographic materials received in exchange shall be the property of the United States and form a part of the library of the organization. And the money resulting from the sale of such publications shall be covered into the Treasury of the United States."

ANNUAL REPORTS.

From the above it will be seen that only the Annual Reports, which form parts of the reports of the Secretary of the Interior and are printed as executive documents, are available for gratuitous distribution. A number of these are furnished the Survey for its exchange list, but the bulk of them are supplied directly, through the document rooms of Congress, to members of the Senate and House. Except, therefore, in those cases in which an extra number is supplied to this office by special resolution, application must be made to members of Congress for the Annual Reports, as for all other executive documents.

Of these annuals there have been already published:

- I. First Annual Report to the Hon. Carl Schurz, by Clarence King, 8°, Washington, 1880, 70 pp., 1 map.—A preliminary report describing plan of organization and publications.
- II. Report of the Director of the United States Geological Survey for 1880-'81, by J. W. Powell, 8°, Washington, 1882, 1v, 588 pp., 61 plates, 1 map.

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Report of the Director, pp. i-iv, plates 1-7.

Administrative Reports by Heads of Divisions, pp. 1-46, plates 8 and 9.

The Physical Geology of the Grand Cañon District, by Capt. C. E. Dutton, pp. 47-106, plates 10-36.

Contributions to the History of Lake Bonneville, by G. K. Gilbert, pp. 167-200, plates 37-43.

Abstract of Report on the Geology and Mining Industry of Leadville, Colorado, by S. F. Emmons, pp. 201-290, plates 44 and 45.

A Summary of the Geology of the Comstock Lode and the Washoe District, by George F. Becker, pp. 291-330, plates 46 and 47.

Production of Precious Metals in the United States, by Clarence King, pp. 331-401, plates 48-53.

A New Method of Measuring Heights by means of the Barometer, by G. K. Gilbert, pp. 403-563, plates 54-61.

Index, pp. 567-588.

The Third Annual Report is now in press.

MONOGRAPHS.

The Monographs of the Survey are printed for the Survey alone, and can be distributed by it only through a fair exchange for books needed in its library, or through the sale of those copies over and above the number needed for such exchange. They are not for gratuitous distribution.

So far as already determined upon, the list of these monographs is as follows:

- I. The Precious Metals, by Clarence King. In preparation.
- II. Tertiary History of the Grand Cañon District, with atlas, by Capt. C. E. Dutton. Published.

- III. Geology of the Comstock Lode and Washoe District, with atlas, by George F. Becker. In press.
- IV. Comstock Mining and Miners, by Eliot Lord. In press.
- V. Copper Rocks of Lake Superior and their continuation through Minnesota, by Professor R. D. Irving. In press.
- VI. Older Mesozoic Flora of Virginia, by Prof. Wm. M. Fontaine. In press.
- Geology and Mining Industry of Leadville, with atlas, by S. F. Emmons. In preparation.
- Geology of the Eureka Mining District, Nevada, with atlas, by Arnold Hague. In preparation.
- Coal of the United States, by Prof. R. Pumpelly. In preparation.
- Iron in the United States, by Prof. R. Pumpelly. In preparation.
- Lesser Metals and General Mining Resources, by Prof. R. Pumpelly. In preparation.
- Lake Bonneville, by G. K. Gilbert. In preparation.
- Dinocerata. A monograph on an extinct order of Ungulates, by Prof. O. C. Marsh. In press.
- Sauropoda, by Prof. O. C. Marsh. In preparation.
- Stegosauria, by Prof. O. C. Marsh. In preparation.
- Of these monographs, No. II is published, viz:
- II. Tertiary History of the Grand Cañon District, with atlas, by C. E. Dutton, Capt. U. S. A., 1882, 4°, 264 pp., 42 plates, and atlas of 26 double sheets folio. Price \$10.12.
- Nos. III, IV, V, and VI are in press and will appear in quick succession. The others, to which numbers are not assigned, are in preparation.

BULLETINS.

In its Bulletins the Survey will print such papers relating to the general purpose of its work as do not properly come under the heads of ANNUAL REPORTS or MONOGRAPHS.

The Bulletins will each contain but one paper, and be complete in itself. They will, however, be numbered in a continuous series, and will in time be united into volumes of convenient size. To facilitate this each Bulletin will have two paginations, one proper to itself at the top, and at the bottom, one which belongs to it in the volume.

Of this series of Bulletins this paper forms No. 1, and is also the first part of Volume I.

Its price is ten cents.

Correspondence relating to the publications of the Survey, and all remittances, should be addressed to the

DIRECTOR OF THE UNITED STATES GEOLOGICAL SURVEY,

Washington, D. C.

WASHINGTON, D. C., February 24, 1883.

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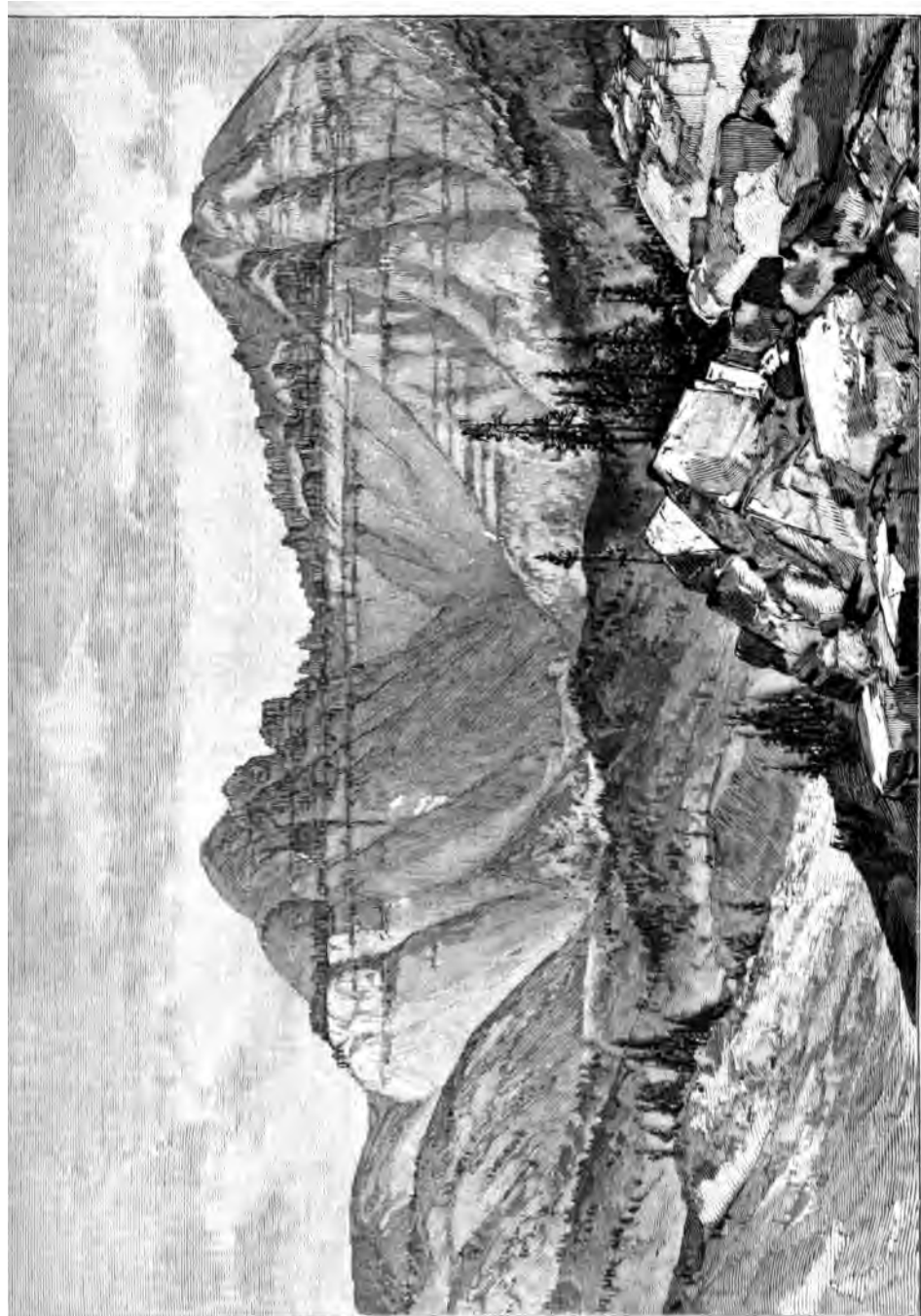


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UNITED STATES GEOLOGICAL SURVEY

J. W. POWELL DIRECTOR

ON
HYPERSTHENE-ANDESITE

AND ON

TRICLINIC PYROXENE IN AUGITIC ROCKS

BY

WHITMAN CROSS

WITH A

GEOLOGICAL SKETCH OF BUFFALO PEAKS COLORADO

BY

S. F. EMMONS

GEOLOGIST IN CHARGE OF ROCKY MOUNTAIN DIVISION



WASHINGTON
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1883

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LETTER OF TRANSMITTAL.

UNITED STATES GEOLOGICAL SURVEY,
DIVISION OF THE ROCKY MOUNTAINS,
Denver, Colo., October 1, 1882.

SIR: I have the honor to transmit herewith a paper by Mr. Whitman Cross on Hypersthene-Andesite, with a brief sketch by myself of the geology of Buffalo Peaks.

The material from which it has been prepared was obtained during the geological study of the Leadville region, and would naturally have been included in the monograph on that district but for the following reason: The andesites from Buffalo Peaks, which, at first glance, appeared to be most characteristic augite-andesites, were found by Mr. Cross on careful examination to differ essentially from the normal order as commonly described. In tracing out the relations of these rocks to the closely-allied so-called augite-andesites, Mr. Cross has obtained results which, if substantiated, give to these investigations a much more general than local character, and make them of value to lithologists in general; so that it seems desirable that they should be published by themselves in the form of a special paper.

Very respectfully, your obedient servant,

S. F. EMMONS,
Geologist in Charge.

Hon. J. W. POWELL,
Director United States Geological Survey.

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INTRODUCTORY GEOLOGICAL SKETCH OF BUFFALO PEAKS, MOSQUITO RANGE, COLORADO.

BY S. F. EMMONS.

During the summer of 1880, a little over two months' field-work was devoted by the party under my charge to a geological study of a portion of the Mosquito or Park Range, as an essential preparation for the investigation of the remarkable ore deposits of the Leadville region.

The area covered by the geological map prepared at this time, which included a length of about 20 miles along the crest, comprised not only its most elevated portion, but also, with a single exception, the most interesting part of the range from a geological stand-point. This exception was found in the Buffalo Peaks, a double-pointed mountain mass rising about 1,000 or 1,500 feet above the main crest, some 10 miles south of Weston's Pass, at the southern limits of our map. Two days were devoted to a hasty examination of these interesting peaks; but, although as many weeks might have profitably been employed in their study, for the reason that the geological phenomena here exhibited had no apparent connection with the ore deposits at Leadville, it was not considered advisable at the time to devote any more of the brief working season of this elevated region to an extraneous study, however interesting. Inasmuch, however, as the microscopical investigations of the specimens collected at that time, made by Assistant Geologist Mr. Whitman Cross, have led to the discovery of hitherto unrecognized characteristics in an important group of Tertiary volcanic rocks, which is set forth in the following pages, it may not be inappropriate to preface his paper with a brief geological sketch of the structure of these peaks, and of their relation to the rest of the range.

The Mosquito Range north of Weston's Pass is made up of Palæozoic beds about 4,500 feet in thickness, extending from the Cambrian to the Upper Carboniferous, with intercalated sheets or intrusive masses of various quartz porphyries and porphyrites, resting on Archæan granite and gneiss. The elevation of the range, which took place at the close of the Cretaceous period, was accompanied by the compression of these beds into a series of sharp folds, characterized by a steep side to the west, or towards the Archæan island, round which the sediments were originally deposited, and by numerous longitudinal faults, with

an upthrow to the east, more or less parallel to the axes of the folds, with which, in general, they are intimately connected.

Towards the south this structure becomes gradually simplified, and the porphyry bodies thin out. At Weston's Pass, already, in place of the complicated system of faults and folds observed in the latitude of Leadville, two great anticlinal and synclinal folds are found, whose axes have the direction of N. 30° W., and whose eastern member has been raised by displacement along a fault plane having about the same direction. One of these folds occupies the main crest of the range, and its corresponding fault runs along the trough of the synclinal on the west, by whose movement the Archæan granite is raised on the crest of the range about 2,000 feet above its corresponding position under the Palæozoic beds which form the surface at the pass itself. The thickness of the interbedded porphyry sheet, which opposite Leadville reaches over 1,000 feet, has here diminished to a little over 20 feet.

The other fold forms a secondary elevation, called Sheep Ridge, on the foot-hills, five miles east of the crest. Here the fault line corresponds very nearly with the axis of the anticlinal fold, which is also that of the ridge, the movement of displacement gradually decreasing in a southerly direction, until the fault ridge becomes simply the elevation of an anticlinal fold. About five miles farther south, at the junction of the Little Platte, which from Weston's Pass flows southeast along the trough of the synclinal, and of Rough-and-Tumbling Creek, which drains the north slope of Buffalo Peaks, not only have the two great faults disappeared, but the two systems of anticlinal folds are merged into a single monoclinal.

Topography is here in singular sympathy with geological structure. Both the main crest and the secondary ridge to the east have the same general direction, with the strike of the geological formations, while the average direction of the topographical crest of the range, as a whole, is more nearly north and south, and its structure consequently that of a series of ridges *en échelon*. Sheep Ridge on the east disappears completely under the plain before the valley of the Little Platte is reached, and is succeeded by an isolated butte called Black Hill, formed by a massive outburst of crystalline rhyolite, breaking through and spreading out over the upturned edges of the Upper Coal Measure formation. The main ridge, which forms the eastern wall of Weston's Pass, descends rapidly to the south, reaching the level of the valley as the Little Platte bends east to flow out into the plains of the South Park, just above its junction with Rough-and-Tumbling Creek. Between these two creeks and near their junction is a series of low ridges formed by strata standing at a great variety of angles and with varying directions of strike, which show the effect of the merging of the double system of folds to the north into the simple monoclinal structure which prevails to the south.

The topographical divide of the range therefore leaves the main crest

at Weston's Pass, and crosses to a second ridge, which overlaps it, on the west of the pass. Stretching southeastward in the direction of the strike, it continues with apparent regularity as far as the Trout Creek Pass, about 20 miles distant along the crest of the range. The structure of this portion of the range, as determined in our hasty visit, seems quite simple. On the west, towards the Arkansas Valley, it presents steep precipitous slopes of Archæan granite. The crest of the higher portion of the ridge is covered by a thin shell of easterly-dipping Cambrian quartzite whose average thickness in this region is about 150 to 200 feet. Resting conformably on this is the White or Silurian Limestone, of about equal thickness, succeeded by the Lower Carboniferous or Blue Limestone, also about 200 feet in thickness; then 2,000 to 2,500 feet of silicious beds, which have been designated the Weber grits; and along the extreme eastern flanks of the range the Upper Coal Measure beds, which consist partly of limestone and partly of coarse reddish sandstone. In the plains along the eastern foot of the range are found occasional ridges of the red sandstones and shales of the Trias, from which it is probable that the salt of the salt springs east of Buffalo Peaks has been derived.

Midway in this monoclinal ridge, and resting on the upturned edges of the strata, are the horizontal beds of andesitic lavas which form the Buffalo Peaks. Their western base rests on granite, immediately under the quartzite, while their eastern flows, whose limits were not ascertained, probably extend well out over the Upper Coal Measure formation. The direction of strike of the sedimentary beds, on the north side at least, seems to have been but little affected by this extrusion of volcanic material; but in immediate contact with the lava, as will be shown later, they have been considerably metamorphosed.

The Buffalo Peaks form an extremely picturesque mountain mass, whose highest point rises to an elevation of 13,541 feet above sea-level, or about 4,000 feet above the adjacent valleys. It consists of a narrow curving ridge forming about one-third of a circle, its concave side toward the north, with a culminating point at either extremity of the arc, the connecting saddle being about 500 feet below their summits. From the northeast base of the eastern peak spreads a broad, flat, massive shoulder, whose area is considerably greater than that of the main peaks. Between the two peaks lies a semi-circular amphitheatre about 2,000 feet deep, in which the appropriately named Rough-and-Tumbling Creek takes its rise, and flows first northward, then eastward to its junction with the Little Platte. The upper 500 feet of the two main peaks is formed of hornblende-andesite of decidedly trachytic habit. Its matrix is of a brownish-gray color, with small crystals of white feldspar and frequent needles of black hornblende. In its columnar structure is very well developed, especially on the connecting ridge between the two peaks, where the columns are often only a few inches in diameter. At this point, rounded fragments of Archæan rocks included in the ande-

sites are of frequent occurrence. There is also a very considerable development of hyalite on the weathered surface of the rocks, and fulgurite is found at the summit of the higher or western peak, lining small holes made by the electric fluid.

The base of the hornblende-andesite is extremely well defined, as shown in the frontispiece, by a horizontal line at about the level of the saddle connecting the two main peaks. Below this, as well as could be seen on the walls of the amphitheatre where they were sufficiently steep not to be obscured by *débris*, the mass of the mountain seems to be made up of tufas and of half-glassy modifications, which are also horizontally bedded, conformable with the base line of the hornblende-andesite. A section was made down the steep spur extending from the north base of the eastern peak into the amphitheatre, giving a freely estimated thickness of 1,000 to 1,500 feet of these tufaceous varieties.

SECTION.

1. 200-500 feet.—Hornblende-andesite.
2. 50 feet.—Semi-vitreous tufa of bright red color, with streaks of black and reddish glass running through it, and containing crystals of basic minerals and of feldspar, with innumerable small inclosed fragments of lavas and other rocks not always determinable.
3. 100 feet.—Beds of similar material, rather black in color. Among inclosed fragments rounded masses of granite, up to 6 feet in diameter, are frequent. Through the mass are thin seams or beds of black glass of a perlitic structure, like an obsidian, with plentiful small fragments of feldspar scattered through the mass.
4. 100 feet.—White and lilac colored porous tufa, with fragments of light-colored trachytic rock, rich in smoky quartz (dacite or rhyolite?).
5. 200 feet.—Tufaceous breccia, with boulders of black, vitreous-looking hypersthene-andesite.
6. 5 feet.—Bed of *dacite (rhyolite?)*.*
7. 50 feet.—Light-colored tufa with fragments of dacite (rhyolite?).
8. 500-700 feet.—Space somewhat covered, mostly of tufa, inclosing fragments of a great variety of rocks.

The next outcrop below the base of the spur was found to be limestone and shales, probably belonging to the Weber grits formation, dipping to the northeast at an angle of about 45°, and having the regular strike of the sedimentary rocks of the region. Within these tufa beds, and weathered out on their surface, were found an immense number of

*The rock described here as dacite (rhyolite?) is one which, from the specimens at hand, it has been impossible to assign definitely to either of these two classes. Macroscopically it resembles the rhyolites, having large smoky quartz and glassy-looking feldspars in a lilac-colored matrix, and possessing a very decided trachytic habit. Microscopical examination fails to determine definitely whether the one specimen in the collection contains more orthoclase or plagioclase feldspar. A partial chemical analysis is equally unsatisfactory, giving silica, 66.500; potash, 2.567; soda, 3.868. It is identical with a rock found breaking through the granite, near the town of Granite, in the Arkansas Valley, west of the Buffalo Peaks. A further field examination will be required to satisfactorily determine the character and relations of this rock.

more or less rounded fragments of included rocks, consisting mainly of granite and various lavas; the latter of which, as far as examined by Mr. Cross, have proved to be of the same character as the northeastern shoulder, *i. e.*, hypersthene-andesite.

The rock of the eastern shoulder, as far as examined, is a dark, nearly black, compact, semi-vitreous rock of conchoidal fracture, which in the field was determined at once as an augite-andesite. The average level of this eastern spur is some 700 or 800 feet lower than that of the summit of the peaks. As far as our observation extended, this rock was not found in mass in direct connection with the hornblende-andesite.

At the northeast base of the eastern peak, about midway between well-defined outcrops of the two rocks, a German miner had sunk a shaft on the flat surface of the ridge, in an iron-stained, clayey material, undoubtedly the result of decomposition of the lava, in which he found very large, irregular masses of milk-white, common opal. Some of these masses reached several feet in diameter, and when broken open it was generally found that their centre consisted of opaque, flint-like chalcedony; showing that in this case the opal had probably resulted from the hydration of chalcedony concretions within the mass of the rock. It was also observed that while the internal kernel of flint readily gave sparks when struck with steel, the exterior opaline portion was not of sufficient hardness to do this. A chemical examination was made of the flint-like kernel and of the white opaline alteration product, with the following result:

	Flint.	Opal.
Specific gravity	2.570	2.023
Hardness	6.	5.5
Loss by ignition (water)	1.843	2.584
Insoluble (in caustic potash) silica....	32.430	0.710
Soluble silica	65.727	96.706
	100.000	100.000

From which it would seem that the change to the opaline form is not simply the result of hydration, since the increase in water in the latter case is only 0.741, or a little over a third more than in the original form of the secretion, but that this must have been accompanied by some molecular change, by which the percentage of soluble silica has become nearly one-half greater.

The outcrops of the upturned sedimentary beds could be traced up to the very entrance of the amphitheatre; the Weber shales, as already mentioned, had been already observed at the base of the eastern peak; the Lower Quartzites resting on the granite form the main crest of the range immediately north of the western peak, while at the northeast base of this peak, at the entrance to the amphitheatre, there was

a cropping of white and blue silicified limestone, showing in a very interesting manner a relic of the solfataric action which probably succeeded the eruption of the lavas. Here the bedding is distinctly seen; the color of the limestone, its granular structure and characteristic veining are still preserved; but the whole mass is completely transformed into silica, and the surfaces frequently coated with a thin white opaline deposit. Chemical tests of three specimens brought from these outcrops, one white or drab, the other two blue limestone, showed the following contents in silica:

	Per cent.
White limestone	97.1
Bluish limestone	97.7
Darker limestone	78.9

with an apparently more than normal proportion of manganese, especially in the darker colored specimen.

The southern slopes of the peak were not examined, but from the summit outcrops of the upturned sedimentary beds could be seen continuing on southward beyond the base of the peak, apparently in a direct line with those observed on the north. The very centre of the amphitheatre was also not visited, as the soft slopes resulting from the decomposition of the tufa beds promised but few outcrops.

Two important questions present themselves in the consideration of the structure of this interesting mass; neither of which, unfortunately, can be considered as definitely decided by the hasty observations made during this visit:

First. Are the peaks the relics of an old volcanic crater?

Second. Was the hornblende- or the hypersthene-andesite the earlier flow?

To the first question the circular form of the main ridge, and its bedded structure, seem at first glance to give a decidedly favorable answer. More mature consideration shows that the present form was mainly due to glacial and post-glacial erosion, whose work in this region has been on such a stupendous scale that evidently the present form of the peaks affords little guide as to the original condition of the mass. Had the present semi-circular ridge once formed part of the crater, we should expect to find some relic of the rest of the circle resting on the ridges to the north; but with the exception of the northeast shoulder, which consists of a distinct rock, and which is evidently also the result of a distinct flow, no lavas were found north of the entrance to the amphitheatre.

As regards the relative ages of the two varieties of andesite, it is to be observed, first, that the hornblende-andesite is the higher of the bedded series; and, second, that from the tufaceous beds no fragments of the hornblende-andesite were obtained; while those of hypersthene-andesite were of very frequent occurrence. On the other hand, the flat eastern shoulder, which is probably formed of hypersthene-andesite, re-

sembles in its form the lateral flows which come from the side of already built-up volcanoes; and as a general rule the more basic augite-andesites have been found to be younger than the hornblendic varieties. In the case of lavas, superposition is by no means necessarily a proof of later origin, inasmuch as the later flows often force themselves under those already existing. Still, in the present case, it must be acknowledged that the evidence, as far as obtained, is in favor of the earlier origin of the hypersthene-andesite.

A third point of interest for future investigation is the determination of the true character and relations of the dacite (rhyolite?) rocks.

The fact that in the present stage of microscopical lithology the old test of the absence of striation lines visible under the microscope is no longer sufficiently conclusive to determine a feldspar as orthoclasic, renders of doubtful value the earlier classification of many rocks as trachytic or andesitic. Many facts already observed by us suggest a doubt whether von Richthofen's classification of volcanic rocks will be found to hold good everywhere in Colorado, and even that many modifications of the relations of the older eruptive rocks, as well as of those of Tertiary age, may be found necessary. The field of work is great, and will involve long and laborious studies before definitive results can be obtained. In the western portion of the Cordilleran system Tertiary volcanic rocks and recent lavas are in vast preponderance, and the older eruptives have been found thus far in but few points. In Colorado, however, while the development of Tertiary eruptive rocks is considerable, it seems probable that a very large proportion of the eruptive rocks will prove to belong to those generally classed as older, from their lithological characteristics alone; of these, however, the most widely developed class may doubtless prove to be Post-Cretaceous, and of those which belong lithologically to the class of Tertiary eruptives or volcanics, there are many whose period of eruption can be but little later than this period.

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ON HYPERSTHENE-ANDESITE AND ON TRICLINIC PYROXENE IN AUGITIC ROCKS.

BY WHITMAN CROSS.

CHAPTER I.

HYPERSTHENE-ANDESITE FROM BUFFALO PEAKS, COLORADO.

The microscopical and chemical investigation of certain andesites from the Buffalo Peaks in the Mosquito Range, Colorado, having proved conclusively that a rhombic pyroxene is, after plagioclase, the most essential constituent, the writer was led to examine carefully all similar rocks at his command. As the results attained are wide-reaching, and affect many well-known European rocks, the observations made on the Buffalo Peaks rock will be given in detail in Chapter I; the results of the comparative study are embodied in Chapter II.

The "Introductory Geological Sketch" by Mr. S. F. Emmons renders any further description of the Buffalo Peaks unnecessary; all reference to topographical or structural detail will be found sufficiently explained in that sketch.

DESCRIPTION OF ROCK.

Those rocks which are to be specially considered in the following pages occur principally as included fragments in the tufa beds, and were found in place only on the shoulder of the main peak which projects to the northeast.

This latter rock is compact, dark or almost black in color, showing minute glassy feldspars, which, by reason of their transparency, seem dark also. A careful examination shows a number of small, dark-green grains and prisms, which are undoubtedly pyroxene, and glistening ore particles. In the fresh state the base in which these minerals lie has a vitreous lustre.

The fragments found in the tufa vary in outward appearance. Part of them are as dark and compact as the one just described, while others are lighter colored, with more distinct crystals of feldspar and a some-

what porous groundmass. In the darker ones, the feldspars are in part of a clear yellowish tinge, producing a very deceptive resemblance to the partially decomposed olivine of basaltic rocks.

When examined under the microscope in ordinary light, these rocks seem to be typical augite-andesites of very simple composition; clear plagioclase crystals, pyroxene in small crystals and irregular grains, with magnetite and apatite, are the only mineral constituents to be recognized. These larger individuals lie in a groundmass composed of thin plates of plagioclase, light-green microlites of pyroxene, and minute octahedrons of magnetite, with a glass basis between them, which is usually clear, though sometimes devitrified by light-brownish globulites. In the rock occurring in place, the microlites are unusually large, while in the others they sink to extraordinarily minute needles.

PECULIARITIES OF THE PYROXENE.—Examined in polarized light, none of the elements, except the pyroxene, show noteworthy peculiarities. A study of the pyroxenic constituent forces one to the conclusion that *a rhombic mineral, probably hypersthene, is largely predominant, while a great number, if not all of the remaining individuals, must be considered as triclinic in crystallization.*

This conclusion is based on the following microscopical and chemical investigations:

In the first place, on testing under the microscope, in polarized light, all the prismatic sections and small prisms whose vertical axis seemed to lie in the plane of the thin section, with regard to their optical orientation, it was found that at least one-half, and generally a much larger proportion, possessed an axis of elasticity parallel to the vertical crystallographic axis. Now, the only section of a monoclinic mineral, in the prismatic zone, which could act in this manner, is plainly that parallel to the orthopinacoid. And any one who has tested the prismatic sections of augite or hornblende, in slides of massive rocks, knows how rarely a section can be found so nearly parallel to the orthopinacoid that no deviation of the direction of total extinction from the vertical crystallographic axis can be detected. The justifiable conclusion is therefore reached, that nearly all of the sections in question belong to a rhombic mineral.

In the next place, the sections apparently cut perpendicularly to the vertical axis present another remarkable deviation from the rule. While such sections should give no data for the separation of rhombic from monoclinic pyroxene, since in both the directions of extinction coincide with the diagonals of the prism, it is here found that in only a portion of the sections does this relation actually exist, and, further, the numerical ratio between those cross-sections with normal and those with abnormal optical relations is, in any given slide, nearly equal to the ratio between those prismatic sections showing the rhombic and those with deviating optical orientation. It is at once suggested that the cross-sections showing normal optical action belong to the same

mineral which, in longitudinal sections, appears as rhombic, while the prismatic sections, which are seemingly normal augite, belong to the apparently triclinic mineral.

The rhombic mineral as shown by the chemical investigations (p. 29) must be considered as hypersthene. Its pleochroism, though distinct, is by no means strong. A section nearly or quite at right angles to the prism has a light-greenish-yellow color, and the changes on revolving it through 90° are too slight to be expressed. In prismatic sections the hypersthene is pale-green in color when its vertical axis is perpendicular to the principal section of the nicol, and greenish-yellow when these directions are parallel. In the latter position there is sometimes a tinge of brown. The other pyroxene is not pleochroic to any noticeable degree. It is always of a pale-green color.

The cross-sections of hypersthene are very well defined. They show the characteristic eight-sided figures of pyroxene, with a distinct prismatic cleavage, and, quite subordinate in some of the sections, a cleavage parallel to the pinacoids. In most of the sections showing a rhombic character, the pinacoidal faces are predominant, the prism simply truncating the angles of the rectangle formed by the former faces.

The hypersthene does not show the prismatic cleavage in longitudinal sections so plainly as the triclinic mineral. The lines are finer, and cross-fissures are common. The terminations, too, are often quite regular, being doubtless caused by domes. (See Fig. 9, Plate II.) It is in the small crystals especially that the regular form of a rhombic mineral is most plain. In the dark and compact rocks there is less difference between these two minerals than in the lighter and porous ones. In the latter one finds some crystals of hypersthene, which are fibrous, with an incipient decomposition proceeding from the cross-fissures along the vertical cleavage planes. (See Fig. 8, Plate II.)

TRICLINIC PYROXENE.—Those cross-sections, showing an anomalous position of the axes of elasticity, are in many ways remarkable. The outlines are similar to those of monoclinic augite, being eight-sided figures, with a distinct cleavage parallel to what may be taken as the prism. The deviation of the angle of extinction from the normal one for monoclinic minerals is *not* constant. Very many of the crystals are apparent twins, and the twinning plane bisects the prism angle in all observed cases.

For convenience, it will be assumed that this plane is the macropinacoid, in accordance with the common law of augite. The divergence of the direction of total extinction from this assumed macrodiagonal is in most cases 20° to 25° , but cases are not rare of its exceeding this average up to $38^\circ 30'$ as observed maximum. It is more often above 25° than below 20° . It is not uncommon to find several angles of extinction indifferent portions of the same cross-section. This will be best understood by a reference to the figures of Plate II.

Plate II.—Fig. 1 represents a section with partially regular outline,

and a cleavage most pronounced in two directions, cutting each other at an angle of nearly 90° . In ordinary light it seems like a simple section of pale augite. In polarized light it appears at first to be a trilling whose composition face is $\infty P \infty$. On determining the direction of total extinction, the (in figure) upper and lower portions are found to agree with an angle of $27^\circ 30'$ from the assumed macrodiagonal. The central portion, however, has an angle of extinction of $10^\circ 30'$, cutting the macrodiagonal in corresponding direction with the preceding. Its relations to the other portions are, therefore, not those of a plate in true twinning position. Moreover, within the central portion, is a small irregular patch, with cleavage parallel to that of the rest, having a third angle of extinction, viz, $6^\circ 30'$, and also in the same general direction.

The phenomenon is hence to be regarded as an intergrowth of substances with common crystallographic, but differing optical orientation. The central portion shows brilliant colors of polarization in certain positions, while the other parts vary only in degrees of light and shade.

In Fig. 2, the extinction of several parts is, as indicated, with angles of $19^\circ 30'$ and 37° . In this case, however, the parts are related as in a trilling crystal, the direction of extinction of the central portion cutting the macrodiagonal in the manner necessary had there been a revolution of 180° about the normal to the macropinacoid. The parts with extinction of $19^\circ 30'$ polarize somewhat more intensely than the others.

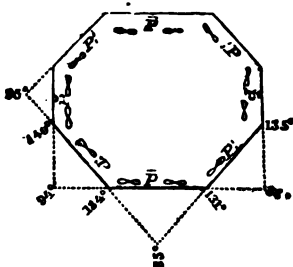
Fig. 3 shows a crystal 0.16^{mm} in diameter, with twin structure, the angles of extinction being respectively 24° and 29° for the two halves. The former gives more brilliant colors in polarized light.

Many small sections are very similar to Fig. 4, with about the same angle of extinction. Fig. 6 represents an apparent intergrowth of rhombic and triclinic pyroxene. The rhombic character is not demonstrable of course, but it seems most probable, as the intergrowth of hypersthene and other pyroxene in prismatic sections is often visible. (See Fig. 5.) The hypersthene polarizes brightly, while the other mineral neither gives distinct colors nor becomes very dark in any position between crossed nicols, so that its nature cannot be determined.

Although measurements of crystal angles made on chance sections in a slide of a fine-grained rock cannot, from the nature of the case, be accurate, an attempt was made to determine approximately the chief angles of the prismatic zone of this questionable mineral. As far as could be judged the section of Fig. 1 was cut very nearly at right angles to the vertical axis, and its bounding planes were sharply defined. The angle b of upper right-hand quadrant was first determined. The mean of several measurements, taken in different ways, was almost exactly 140° . To obtain the angle a , a measurement from $\infty P \infty$ to the plane of intergrowth was made, as $\infty P \infty$ was not well defined; 134° was the result within a few minutes. The angle of the two pinacoids was next measured at 94° , which would be necessary for the two pre-

ceding determinations. The angle a was determined as a mean of several trials at $134^{\circ} 47'$, the prism angle between faces on right-hand of section = 95° (nearly).

A section of the prism of this mineral, at right-angles to the vertical axis, would therefore have the accompanying form:



The figures of the plate will be seen to have a very similar form. If the sections Figs. 2 and 3 were of normal twins, according to a pinacoid face, there should be a re-entering angle visible, in case the above measurements are correct. On some of the sections seen, this seemed to be actually the case, but they were too small and indistinct to admit of measurement.

In some of the cross-sections the cleavage is apparently better developed parallel to one of the prismatic directions than to the other; for example, see Fig. 1; but this difference is very slight, and no weight can be laid on it.

TRICLINIC PYROXENE IN OTHER ROCKS.

The writer has noticed, and briefly described, an apparent triclinic pyroxene in certain crystalline schists in Brittany.¹ The phenomenon was there less distinct than in the present case, and it was then thought probable that it was an anomalous optical action of the monoclinic augite, the cause of which was unknown. No twin structure or intergrowth was there noticed, and the divergence of the direction of extinction from the normal one was even more variable than in the case in hand. The material, too, was less favorable for accurate observation, yet the two instances are so similar that in all probability they are due to the same cause.

A third occurrence of this same phenomenon has been observed by the writer in a feldspar basalt from Grand River, above the Hot Springs, Middle Park, Colorado. Mr. S. F. Emmons, in passing through the Park, collected specimens of several basalts, and one of them shows, under the microscope, a pyroxene seeming in ordinary light typical of the normal augite of such rocks. It is not pleochroic to any describable degree. Its cross-sections are eight-sided figures, with a strongly marked cleavage. Fig. 7, Plate II, represents a cross-section of a twin

¹ W. Cross: "Studien über bretonische Gesteine." Min. und pet. Mittheilungen. G. Tschermak, (Neue Folge), III, p. 396.

crystal observed in this basalt. The angles of extinction for the two halves, 19° and 22° from twinning plane, are perhaps within the limits of possible error of observation in a section whose exact position cannot be determined. All other cross-sections show similar relations, but the angle of extinction varies from 18° to 33° from a diagonal of the prism. In longitudinal sections the action is normal.

The finding of pyroxene with such abnormal optical properties in three distinct rocks, from such widely separated localities, led naturally to the examination of the pyroxene in the common augite rocks, such as diabase, basalt, &c. The result of such examination is to show that even in well-known rocks a portion of the pyroxene does not exhibit in polarized light the properties required of a monoclinic mineral. In many cases, sections of the supposed augite, which, from all available data, seemed to be cut very nearly at right angles to the vertical axis of the crystal, were found to act abnormally between crossed nicols. A number of instances are given below, mainly from well-known European localities, where this abnormal action was noticed. In each of these rocks, at least one section of pyroxene was found, which, without examination in polarized light, would be considered, as determined by the following tests, to be a typical cross-section of augite. In the first place, if, in a given rock, the pyroxene was found to possess a prismatic development, an eight-sided figure with the proper angles was required. Parallel to two of these outlines there must be a very distinct cleavage, the angles formed by cleavage planes being measurable at very near 87° and 93° . By means of the micrometer screw, it could be shown in each case that the cleavage plane lay nearly or quite parallel to the axis of the microscope.

In each of the rocks mentioned below, a section of apparent augite, determined, as above, to be nearly or quite perpendicular to the vertical crystallographic axis, was found to extinguish light between crossed nicols at a very decided angle from the diagonals of the prism. In all cases cited, the section was clear, fresh, and free from all visible disturbing elements. In a few cases, where the maximum of darkness was not very distinct, the interference cross of the calcite plate and the most sensitive colors produced by the quartz plate were used in the determination.

The instances referred to are as follows:

1. *Diabase*.—Ilkendorf, near Nossen, Saxony.
2. *Diabase*.—Near Elbingerode, Hartz Mountains, Germany.
3. *Diabase*.—Burg in Nassau, Germany.
4. *Olivine-diabase*.—Björfvas, Dalarne, Sweden.
5. *Melaphyre*.—St. Wendel on the Nahe, Germany.
6. *Hornblende-andesite*.—Bolvershahn, Siebengebirge, Germany.
7. *Hornblende-andesite*.—Jakuben, near Tetschen, Bohemia.
8. "*Augite-andesite*."—Mount Cotopaxi, Ecuador, South America.

9. "*Dolerite*."—Löwenburg, Siebengebirge, Germany.
10. "*Dolerite*."—The Meissner, Hessen, Germany.
11. *Feldspar-basalt*.—Bildstein, Vogelsberg, Germany.
12. *Feldspar-basalt*.—Holmestrand, Sweden.
13. *Nephelinite*.—Meiches, Vogelsberg, Germany.
14. *Feldspar-basalt lava*.—Mount Ætna, eruption of 1537.
15. *Nepheline-basalt*.—Robschitz, near Bilin, Bohemia.
16. *Nepheline-basalt*.—Herchenberg, Laacher See, Germany.
17. *Leucite-basalt*.—The Abtei, Laacher See, Germany.
18. *Leucite-basalt*.—Veitskopf, Laacher See, Germany.
19. *Leucite-basalt*.—Niedermendig, Laacher See, Germany.
20. *Häüyne-basalt*.—Cranzahl, Saxony.
21. *Leucite lava*.—Mount Vesuvius, old eruption.

In very many other cases the same behavior was noticed, but less decidedly. Especially in comparison with the hornblende of diorite, porphyrite, &c., is the abnormal behavior of pyroxene noticeable.

So far as is known to the writer, this abnormal action of supposed augite has never been dwelt upon, if indeed it has been noticed at all. None of the available material contains the questionable mineral, in size or perfection, suitable for isolation and crystallographic investigation; hence the correctness of the view here advanced, that it is triclinic, cannot be proven. The only other explanation possible is that of an "optical anomaly."

If this mineral be triclinic in crystallization, it is manifestly different from either Babingtonite or Szabóite, the only known triclinic pyroxenes, and forms a new species, whose chemical composition does not, in all probability, vary greatly from that of common augite. The variations in optical behavior suggest an analogy with the triclinic feldspars.

Whether the observed behavior be finally explained in accordance with the hypothesis here advocated or not, an interesting and important subject for further investigation is certainly indicated.

CHEMICAL COMPOSITION OF THE ROCK.

The rock selected for chemical analysis is that occurring in place on the northeast shoulder of the main Buffalo Peak. (Coll. No. 144.) For a description of its structure and constituents see page 19. The rock was very fresh, and the minerals recognized in it are plagioclase, two pyroxenes, magnetite, and a little apatite. Between these is a brownish glassy base.

The specific gravity was taken at a temperature of 16° C. The analy-

sis was made by Mr. W. F. Hillebrand, chemist to the Rocky Mountain Division of the Survey.

Specific gravity	2.742
SiO ₂	56.190
Al ₂ O ₃	16.117
Fe ₂ O ₃	4.919
FeO	4.433
MnO	trace
CaO	6.996
BaO	trace
SrO	trace
MgO	4.601
Na ₂ O	2.961
K ₂ O	2.368
H ₂ O	1.028
P ₂ O ₅	0.266
Cl	0.022
	<hr/> 99.901

There is but little in the analysis which requires special explanation. The percentage of K₂O is considerably larger than would be expected, as none of the larger crystals of feldspar can be considered as sanidine. The amount of P₂O₅ found, with the Cl, indicates that minute needles of apatite must be quite abundant in the groundmass, though but few can be recognized as such. BaO and SrO are seldom given in analyses of andesites—probably, in many cases, because they were not sought for.

ISOLATION AND ANALYSIS OF HYPERSTHENE.

In order to establish the identity of the pyroxene, which seemed from its optical behavior to be rhombic, an attempt was made to isolate the same for analysis. It is scarcely necessary to mention in this connection that the desire to compare the Buffalo Peaks rock with the hypersthene-bearing andesite of the volcano of Santorin in the Grecian archipelago led to the chemical investigations which follow; and it may be safely assumed that the chief results of the investigations of Fouqué on the Santorin lavas are known even to those to whom the final volume, with its wealth of minute observations and splendid illustrations, is not accessible.²

INVESTIGATIONS OF FOUQUÉ ON THE LAVAS OF SANTORIN.—Fouqué found that the lava of the eruption of 1866, which at first glance seemed a typical augite-andesite, contained in reality two pyroxenes, which he isolated and determined as normal augite and *hypersthene*. He also found hypersthene in older rocks of this same volcanic group. It is the first

²F. Fouqué, "Santorin, et ses éruptions", Paris, 1879.

instance where the presence of a rhombic pyroxene in "augite-andesite" has been chemically and optically proved beyond dispute.

As the so-called Thonlet solution of the iodide of mercury in the iodide of potassium was not available at the time the investigations were in progress, recourse was had to the method employed by Fouqué (*l. c.*, p. 190) in separating the iron-bearing minerals of the Santorin lavas from the other constituents.

METHOD USED IN ISOLATION OF HYPERSTHENE.—A specimen of the rock was crushed until all passed through a sieve containing sixty meshes to the inch. Only that portion of the powder was used which was retained by a sieve having eighty meshes to the inch, as uniformity in size of the grains acted upon by the acid is desirable, and the finer powder is objectionable on several accounts (see Fouqué, *l. c.*). The grains thus obtained were placed in a platinum dish, and treated with strong fluorhydric acid, which attacks first the feldspars and other substances free from or poor in iron. According to Fouqué, concentrated acid is best, in which case, in pouring the powder, little at a time, into the acid, there is a more or less violent ebullition without the application of external heat. On the ceasing of this ebullition it may be presumed that a large part, if not all, of the easily attacked minerals is dissolved. The action is stopped by dilution with water. If matter still remains which it is desired to remove, the water is poured off and the powder treated again with acid. In the present case the acid was not concentrated, and hence considerable heating was necessary. In all cases the powder should be rapidly stirred with a platinum spatule. On discontinuing the action of the acid, there is always more or less gelatinous silica deposited upon the remaining grains. This is removed by repeated washings and rubbing of the powder under water with the finger. The magnetite is then separated with a small magnet.

A specimen of the Buffalo Peaks rock (Coll. No. 144) of which the complete analysis was made, treated as above at different times, yielded a powder in which there were only a few white grains remaining. The acid did not seem to attack them very readily, and before they entirely disappeared a considerable portion of the pyroxene was also dissolved. The residue was finally obtained quite pure, and yielded upon analysis the results under I and II below. Fouqué found (*l. c.*, p. 195) that if the mixture of augite and hypersthene derived from the Santorin lava were further treated with fluorhydric acid, the augite was much more easily attacked, as it contained less iron, and that he could in this way finally obtain hypersthene with but little admixture of augite. In the present case the microscope showed a large amount of augite with the rhombic mineral, in the rock section, but the analysis shows the substance analyzed to have been nearly pure hypersthene; hence, it is presumable that the quantity of pyroxene which was dissolved in removing the white grains above referred to must have been chiefly augite. Microscopic examination of

material left in Analysis I (which has been made since this was written), after the feldspar had disappeared, showed a decided admixture of augite with hypersthene; the augite was, however, removed by further treatment with acid.

Another specimen from the Buffalo Peaks, from a boulder in the tufa beds (Coll. No. 150), was treated in the same manner. This rock was chosen because the microscope showed a large amount of very pure rhombic pyroxene and but little augite. The powder obtained was examined with the microscope and found to be almost absolutely free from impurities. Its analysis is given under III.

MICROSCOPIC INVESTIGATION OF ISOLATED MATERIAL.—The microscopic study of the isolated crystals and fragments shows clearly the rhombic nature of the mineral in question. The crystals obtained are often 0.3^{mm} in length, and 0.15^{mm} in thickness. In all those suspected of being rhombic, the pleochroism is much stronger than has been described for the sections observed in the slide. (See p. 21.) The changes in color are from a dark reddish-brown to a very distinct green, instead of from greenish-yellow to pale green. Every such prism extinguishes light, parallel to the vertical axis. The grains of augite are more of a bottle-green color, and only very faintly pleochroic. In the material obtained from specimen (Coll. No. 150) affording III, probably not more than one per cent. of the grains are augite. Many prisms are quite perfect, and it would not be at all difficult to isolate a large number of little crystals of almost the exact appearance of those reproduced by Fouqué in Plate LX, Fig. 2, of his previously cited work. The crystals in the Buffalo Peaks rock are usually stouter than most of those pictured by Fouqué, but are quite as regular in form. Fig. 9 of Plate II shows a crystal from the thin section of the rock which furnished the material for Analysis III.

ANALYTICAL TABLE.—For comparison, the composition obtained by Fouqué for the hypersthene of the Santorin lava of 1866 is given under IV; under V the analysis of the "augite" from the "augit-andesit" of the highest peak of the "Sierra de Mariveles" in the island of Luzon, given by Oebbeke;³ and under VI, the analysis by Damour of the well-known hypersthene from St. Paul's Island, on the coast of Labrador, as given by Dana.⁴

The isolation of the hypersthene, and Analyses III and III, were carried out by Mr Hillebrand.

³ K. Oebbeke, Neues Jahrbuch, etc., I Beilage Band., p. 451 (1881).

⁴ J. D. Dana. A System of Mineralogy, fifth edition, p. 210.

ANALYSES.

	I.—Buffalo Peaks.	II.—Buffalo Peaks.	III.—Buffalo Peaks.	IV.—San- torin.	V.—Iu- zon.	VI.—Saint Paul's.
Sp. Gr.	.....	.....	3.307	3.477	.....	.....
Si.....	51.703	51.157	50.043	50.12	51.50	51.36
Al.....	1.720	2.154	2.006	2.13	3.80	0.37
Fe.....	0.304	.....	.....	1.60	2.80	.....
Ca.....	17.095	18.360	17.812	23.59	10.00	21.27
Mg.....	0.363	0.363	0.120	.....	0.75	1.32
Mn.....	2.873	3.812	6.696	10.49	10.45	3.00
Na.....	25.091	24.251	21.744	11.05	19.09	21.31
K.....	.....	.....	0.274	0.67	.....	.....
Total	100.049	100.097	99.595	99.64	99.65	98.72

The specific gravity of III was taken at 23° C.

DISCUSSION OF ANALYSIS.—In I and II the alkalis were not tested for, and in II and III all the iron is given as FeO, because the special determination of the protoxide was not successful. The amount of Fe₂O₃ present, is in all probability about the same as in I. The amount of iron derived from grains of magnetite included in the pyroxenes of II and III is small. The crystals are unusually free from inclusions of all kinds. The M₂O of II is taken from I, and is undoubtedly very nearly correct, the portions analyzed being derived from the same rock. In III is included a small amount of feldspar attached to hypersthene grains, and which could not be dissolved without losing too much of the latter mineral.

On comparing II and III with the other analyses of the table, it is clear that they are much nearer to typical hypersthene (VI) in composition than the rhombic mineral of the Santorin lava, whose identity with hypersthene has been recently admitted, even by Rosenbusch,⁵ who had first expressed doubts upon the subject.⁶ The varying quantities of CaO in I, II, III, and IV may indicate that the simple silicate, CaSiO₃, enters more largely into the composition of rhombic pyroxene, as occurring in rocks, than has heretofore been supposed.

The only instance since the work of Fouqué, known to the writer, where the pleochroic pyroxene of an "augite-andesite" has been isolated and examined with regard to its crystal system, is in the case of the rock from the Sierra de Mariveles, which was investigated by Oebbeke (*l. c.*), and which gave Schwager the composition V of the table. Oebbeke usually pronounces the mineral to be augite and not hypersthene. In this case, as in those mentioned later (p. 34), the grounds given for the determination are by no means satisfactory. The only evidence given by Oebbeke in favor of the monoclinic system is the following:

⁵ Review of Fouqué's work on Santorin, in Neues Jahrbuch, etc., 1880, II, p. 310.

⁶ Rosenbusch, Massige Gesteine, p. 418.

He examined a few of the isolated pleochroic prisms by attaching them singly to a piece of wax in such a manner that he could test the direction of extinction parallel to each face of the prismatic zone, and in each crystal examined he found oblique extinction in some position. The writer found, on examining the material which furnished Analysis III, that many pleochroic prisms did not give definitely an extinction parallel to the vertical axis when lying loosely on an object glass in air; but that the same grains mounted in balsam were much more clear and distinct in their optical behavior, and always in favor of the rhombic system. In the case of such tiny grains, especially when obtained by the crushing of rock to powder, the examination of optical properties in the air is very unsatisfactory. The reflection of light from uneven surfaces, the disturbing influence of fissures, of included substances, &c., all tend to make the optical examination of minute particles in air unreliable. If mounted in balsam, the liability to error is much less.

The substance which yielded the composition V was isolated by means of the Thoulet solution, and would represent a mixture of rhombic and monoclinic pyroxenes, were both present in the rock. The figures of V are certainly abnormal for any augite known to occur as a rock constituent, but are easily explained on the supposition of a mixture of augite with a bronzite or hypersthene.

CHAPTER II.

RHOMBIC PYROXENE IN OTHER ANDESITES.

resemblance of the Buffalo Peaks rock to that variety of augite which has always been regarded as most typical, naturally led that all available examples of the latter should be examined with regard to the character of the pyroxenic constituent. The particular variety referred to is that characterized by a glassy base, often brownish or, in which lie a multitude of minute microlites of plagioclase pyroxene, with magnetite grains. The same minerals occur in porphyritic individuals, though by no means so prominently as in other varieties of andesite. Hornblende and biotite are often entirely wanting and rarely abundant. Olivine appears occasionally. This variety is especially abundant in Hungary, Transylvania, and Servia.

Many of the rocks examined come from well-known European localities, the observations in each particular case will be concisely stated. Unfortunately, only their sections, without hand specimens, were available.⁷

In each section the attempt was made to observe and record the position of total extinction in every prismatic section of pyroxene of sufficient size to allow exact determination.

SUMMATED RESULT OF OBSERVATIONS ON AUGITE-ANDESITES.—Comparison of prismatic sections with rhombic, to those with monoclinical orientation, was found to be in the rock from:

Abnunitz, near Schemnitz, in Hungary	as 8 : 2
Adlrad, near Schemnitz, in Hungary	as 15 : 5
Agonya, near Schemnitz, in Hungary... ..	as 13 : 6
Gönczer Thal," near Schemnitz, in Hungary	as 21 : 1
Der Fernezely, northeast from Nagy-Banya, Hungary....	as 15 : 2
Szaj-Ingnies, northeast from Nagy-Banya, Hungary....	as 8 : 5
Southeast of Rank, Abanjer Comitatus, Hungary	as 47 : 11
Iagos Ter, Abanjer Comitatus, Hungary	as 43 : 17
Between Tuhirina and Czervencza, Sarosier Comitatus, Hun-	
gary	as 24 : 6

⁷ Nos. 1, 2, 3, 4, 5, 6, and 13, the writer is indebted to Prof. F. Zirkel, of Leipzig. Nos. 9, 10, 11, and 12 are contained in the "Sammlung No. 6, von typischen vulkanischen Gesteinen aus Ungarn und Serbien," prepared and sold by R. Fues, in Berlin. The material is said to have been selected and described by Prof. J. Szabó, in Buda-

pesta. Nos. 7, 8, and 9 are rocks sent by the "K. K. geologischen Reichsanstalt" of Austria to the United States Geological Survey of the Fortieth Parallel, and were kindly

- | | |
|---|--|
| (10) Tokajer Berg, Northeastern Hungary | } None distinctly
monoclinic
could be found. |
| (11) Lorinczi, Mátra Gebirge, Central Hungary | |
| (12) Borač, Southern Servia | |
| (13) Mount Cotopaxi, Ecuador, South America | as 10 : 5 |

DISCUSSION OF TABLE.—In Nos. 4, 5, and 6, only the larger sections were counted. There are many of about 0.4^{mm} to 0.5^{mm} in length, all of which extinguish light parallel to the vertical axis.

The few sections in which the optical behavior was not distinct were neglected.

The microlites of pyroxene, in cases where they could be tested, seemed for the most part to be monoclinic, but the determination was seldom satisfactory.

It appears, therefore, that in all those cases mentioned above, a rhombic pyroxene is much more abundant in porphyritic individuals than augite. For it cannot be supposed that such constant results could be obtained through mere chance. It is true that sections of augite parallel to the orthopinacoid are not to be distinguished optically from rhombic pyroxene, but it is not possible to explain the above figures in that way.

The same difference in appearance between the two pyroxenes is to be noticed in the above rocks which was described in the case of the Buffalo Peaks andesite. The rhombic mineral is pleochroic in the same manner (p. 21), while the monoclinic is not noticeably so. There is also a difference in development. The rhombic pyroxene, which, through analogy with the cases described, will be hereafter designated as hypersthene, is better developed than the augite. Its crystals show terminations as if from domes quite frequently, and its cross-sections are sharper, being chiefly bounded by pinacoidal outlines. The augite grains are much more irregular as a rule, and contain glass and magnetite inclusions in greater abundance than the hypersthene crystals. An apparent intergrowth of the two was not unfrequently noticed, as in the rocks from Bohunitz and Roszaj-Ingnies.

AUGITE-ANDESITES OF THE 40TH PARALLEL.—Through the courtesy of Mr. Arnold Hague the slides of the andesitic rocks collected during the geological exploration of the Fortieth Parallel, and which have been described by Prof. F. Zirkel,⁹ were placed at the disposal of the writer. The results obtained from the examination of these slides agree fully with what has been stated concerning the European rocks. In all but two of those rocks described by Professor Zirkel as "augite-andesites" a very large part of the pyroxene seems identical

loaned to the writer by Mr. Arnold Hague, United States Geologist, the custodian of the collections belonging to the Fortieth Parallel Survey. The rocks bear respectively the numbers 24, 25, and 19 of the Austrian Survey, and are labeled "Grauer Trachyt, Richthof." They are all typical rocks, in fresh condition, of the class under discussion.

⁹F. Zirkel, *Microscopical Petrography*. Washington, 1876, p. 221.



ERRORS IN BULLETIN 1, UNITED STATES GEOLOGICAL SURVEY.

TEXT.

- Page 15, line 4 from below, omit "already."
Page 28, line 4 from below, for "III and III" read *I, II, and III*.
Page 33, lines 8, 28, and 34, for "Niedzwiedski" read *Niedzwiedski*.
Page 33, lines 30 and 31, for "von Drasche" read *Niedzwiedski*.
Page 37, line 12 from below, for "Bendant" read *Beudant*.
Page 37, line 6 from below, for "Jahrbuck" read *Jahrbuch*.

INDEX.

- Page 39, line 10, insert *Augitic rocks* before "Triclinic pyroxene in."
Page 39, line 11, for "Audrian" read *Andrian*.
Page 39, line 13, for "Bendant" read *Beudant*.
Page 39, line 15, for "Dana, J. D.," read *Damour*.
Page 39, line 17, omit "34."
Page 39, line 20, omit "on."
Page 39, line 25, for "Niedzwiedski" read *Niedzwiedski*.
Page 39, line 27, for "Von" read *vom*.
Page 39, line 31, for "Tables compiled by" read *Analyses by*.
Page 39, line 34, for "Rhombic pyroxene" read *Augite*.
Page 39, line 40, for "Bendant" read *Beudant*.
Page 39, line 42, for "Delarue" read *Dalarné*.
Page 39, line 46, for "Borac" read *Borač*.
Page 40, line 14, for "35" read 34.
Page 40, line 17, for "Dana, J. D.," read *Damour*.
Page 40, line 21, omit "34."
Page 40, line 28, for "andisite" read *andesite*.
Page 40, line 32, omit comma after Gorni.
Page 40, line 36, for "Hillerbrand" read *Hillebrand*.
Page 40, line 38, omit entire line.
Page 41, line 7, for "Moscar" read *Mocsar*.
Page 41, line 14, for "Niedzwiedskie" read *Niedzwiedski*.
Page 41, line 26, for "Von" read *vom*.
Page 41, line 46, for "Tables compiled by" read *Analyses by*.

NOTE.—In explanation of the great number of errors in this bulletin, it is due to the authors to state that the index was called for at very short notice and somewhat hurriedly prepared, with the expectation of careful revision in the proof, but that, by mistake, no proof of the same was submitted to them.

with that which is regarded as probable hypersthene in the above rocks. The two exceptions (Mic. Nos. 514 and 515) are basaltic in habitus and carry olivine.

PREVIOUS OBSERVATIONS OF RHOMBIC PYROXENE IN AUGITE-ANDESITES.

HISTORICAL.—The number of instances known to the writer where the presence of rhombic pyroxene in "augite-andesites" has been at all emphasized is extremely small. J. Niedzwiedski¹⁰ described in 1872 a rock from St. Egidii, in Steiermark, as "Hypersthen-Andesit." In 1877 this rock is mentioned by Rosenbusch¹¹ as the single rock known which can bear that name. In 1880 E. Hussak¹² pronounced it an ordinary augite-andesite, and, so far as the writer is aware, his verdict has not been questioned. Reference will again be made to this case later.

The occurrence of rhombic pyroxene even as an accessory constituent of augite-andesites has been but rarely announced.

R. von Drasche¹³ has mentioned bastite as occurring in augite-andesite from Videna, in Steiermark.

Rosenbusch¹⁴ at the time of issuing his often cited work (1877), while not denying that a rhombic pyroxene may occur in augite-andesites, is still inclined to consider those pleochroic prismatic sections of pyroxene in which light is extinguished parallel to the vertical axis, as chance sections of augite parallel to the ortho-pinacoid. It is in great measure owing to this judgment, no doubt, and to the undoubted presence of pleochroic augite in recent rocks, that many observers have seemed to dismiss all thoughts of rhombic pyroxene if in the same slide with pleochroic sections, such as have been described, normal augite with its oblique extinction could be found. Thus, E. Hussak (*l.c.*) disposes of the hypersthene andesite of Niedzwiedski with the simple assertion that the pyroxene is monoclinic, because he has found apparent prismatic sections in which extinction took place at more than 30° from the vertical axis. Inasmuch as he had previously confirmed the statements of von Drasche¹⁵, it seems highly probable that augite is not specially abundant in this andesite.

¹⁰ J. Niedzwiedski, *Tschermak's Min. und pet., Mittheilungen*, IV, 1872, p. 253.

¹¹ H. Rosenbusch, *Massige Gesteine*, p. 480.

¹² E. Hussak, *Neues Jahrbuch für Mineralogie, etc.*, 1880, I. p. 289.

¹³ R. von Drasche, *Tschermak's Min. und pet. Mitth.*, 1873, V. p. 1.

¹⁴ H. Rosenbusch, *Massige Gesteine*, p. 411.

¹⁵ E. Hussak, *Verhandl. d. k. k. Geol., Reichsanstalt, Vienna*, 1878, p. 338.

Hussak¹⁶ has also published the results of microscopic investigation on the eruptive rocks of the region about Schemnitz, in Hungary. While the rocks of this district have been frequently studied by eminent investigators, such as Zirkel, vom Rath, and Doelter, the publication of Hussak is here considered as the most recent known to the writer. Augite-andesite, of the type especially under consideration, is very abundant near Schemnitz. Hussak mentions a large number of occurrences, among them those of Bohunitz and Podhrad, and the great similarity of most of them is evident. The pyroxenic constituent is always called augite, although some of it extinguishes light parallel to the vertical axis. Decomposition products resembling bastite were also noticed. The pleochroism is quite strong and the pinacoids are markedly predominant. The angle of extinction in two cases is given as 47° and 48° .

The general description given by Hussak corresponds closely to that required by the two slides in possession of the writer, from Podhrad and Bohunitz, except that no allowance is made for two species of pyroxene.

The short description accompanying the slides of the Fuess collection (see p. 31) mentions no other pyroxene than augite, even in those cases where every prismatic section seems to be rhombic.

The determination of hypersthene in the lavas of Santorin, and the statements of Oebbeke concerning the pyroxene in the "augite-andesites" of the Philippine Islands, have already been cited. (p. 29.)

In all other descriptions of or references to augite-andesite of the chief type which have come under the observation of the writer, it is impossible to obtain satisfactory data concerning the pyroxene. In nearly all of them, however, the pleochroism and predominance of the pinacoids are dwelt upon, which, in the light of the present investigation justifies the suspicion that rhombic pyroxene is not wanting. Two instances will be given where the existing descriptions of "augite-andesites" suggest the identity of the supposed "augite" with the rhombic pyroxene of the rocks here described.

Rosenbusch¹⁷ mentions that the augite of the "augite-andesites" from Chimborazo and Tunguragua, in the Andes of South America, is strongly pleochroic. Artopé¹⁸ has given analyses of several augite-andesites from the Andes, among them being two from Tunguragua. One of these shows nearly 6 per cent. MgO, while in two other cases nearly 4 per cent MgO is given. The augite-andesite from Cotopaxi, examined by the writer, showed 10 apparently rhombic pyroxenes to 5 monoclinic.

Again, Cohen¹⁹ describes the porphyritic augite crystals of two Ha-

¹⁶E. Hussak, Sitzungsbericht d. k. Akad. d. Wiss., Vienna, July, 1880, p. 164.

¹⁷Rosenbusch, *Massige Gesteine*, p. 420.

¹⁸Artopé, "Über angithaltige Trachyte der Anden," 1872. Göttingen.

¹⁹E. Cohen, "Über Laven von Hawaii," etc., *Neues Jahrbuch*, etc., 1880, II, pp. 3 and 54.

waiian andesites as "*kräftig pleochroitisch*" in the same manner shown in the Buffalo Peaks hypersthene, while the microlites in the groundmass do not seem to be so. Also, the augite of an "*Augitandesitbimstein*" found between New Britain and New Ireland, in the South Pacific Ocean, is strongly pleochroic in the same manner.

RHOMBIC PYROXENE IN DIABASIC ROCKS.

The possibility that a rhombic pyroxene may occur in some augite-andesites has been admitted by Rosenbusch,²⁰ who, while denying that the pleochroic pyroxene, so common in augite-andesites, is rhombic, expresses a belief that the final discovery of a rhombic pyroxene in a subgroup of the augite-andesites is even highly probable. This probability arises out of analogy with the diabase-porphyrates of the left bank of the Lower Rhine, which contain enstatite. It is interesting and significant that this analogy is borne out in Colorado.

ENSTATITE-BEARING DIABASE FROM COLORADO.—At Morrison, near Denver, there is in the Archæan gneiss a narrow dike of a dark aphanitic rock. Under the microscope this rock is seen to consist chiefly of narrow prisms of plagioclase and a colorless pyroxene. The angular spaces between these are filled in part with a colorless anisotropic mineral, which may be orthoclase, and with a dark groundmass. The ore is apparently magnetite, and is almost exclusively confined to the groundmass, where it occurs in regular aggregations, and seldom in single grains. These aggregations seem often like devitrification products, and a glass base is in places to be identified. The pyroxene occurs chiefly in prisms of about 1^{mm} in length by 0.2^{mm} in thickness. All such individuals are colorless, have numerous cross-fissures, and extinguish light when the vertical axis is parallel to the principal section of one of the crossed nicols. The cross-sections show a dominant development of the pinacoids. The cleavage is most pronounced parallel to the prism, but there are many irregular fissures, and some parallel to the pinacoids.

The absolute identity of this mineral with enstatite has not been proven, but there seems to be no good reason for doubting it. The remaining pyroxene is in smaller prisms and has a very slight pinkish color. Nearly all of these prisms have an angle of extinction exceeding 30°, and they belong undoubtedly to augite.

The age of this rock cannot be determined, but it has throughout the habitus of a Pre-Tertiary eruptive.

RHOMBIC PYROXENE IN HORNBLende-ANDESITE.

The presence of a rhombic pyroxene in the hornblende-biotite-andesites has been seldom announced.

²⁰Rosenbusch, *Massige Gesteine*, p. 411.

Rosenbusch²⁰ found it in one dacite; Lagorio²¹ found pyroxene in certain andesites of the Caucasus which acted optically like a rhombic mineral, yet he does not pronounce it such.

In the hornblende-andesite from Buffalo Peaks, pyroxene, wholly analogous to that of the hypersthene-andesite, is quite abundant. In the tufas of the same locality hypersthene is often associated with hornblende and biotite.

A slide in the possession of the writer, from Moisar (Mocsar†), in Hungary, shows hornblende, biotite, and apparent hypersthene. The groundmass of this rock is much less prominent than in the typical "augite-andesites," yet seems to be essentially of the same character, and the occurrence may represent a transition form.

The Fuess collection (see note, p. 29) contains two beautiful hyaline andesites from Gorni Milanovatz, and Slatni, in Central Servia, in which the pyroxene seems to be rhombic, with scarcely an exception. Hornblende and biotite are abundant in the same. On the other hand, the pyroxene in the andesite from Jakuben, near Tetschen, in northern Bohemia, though strongly pleochroic, is still unmistakably augite. The pleochroism of this augite is, however, very different from that which is characteristic of andesitic hypersthene. Augite, sometimes faintly pleochroic, can often be found in andesites and trachytes of the Siebengebirge, the Auvergne, and other districts, but in these cases sections with rhombic optical action are very rare and cannot be considered as indicating a rhombic mineral.

CLASSIFICATION OF ANDESITIC ROCKS.

NEED OF A RECLASSIFICATION.—The group of the andesites, including all Tertiary eruptive rocks with plagioclase and one or more of the minerals hornblende, biotite, or pyroxene as essential constituents, is more in need of a natural subdivision than any other in the category of modern petrography. This statement will hardly be disputed.

The division into hornblende and augite-andesites has often been assailed, with justice, on the ground that very many rocks contain hornblende and augite in about equal quantity, making the transition stage of as frequent occurrence as either of the extremes. On the other hand, the division of the augite-andesites has been justly defended, by pointing to the "original," or the typical rock, in which hornblende and biotite seldom play any other than a very subordinate part, and which has been

²⁰Rosenbusch, *Massige Gesteine*, p. 300.

²¹A. Lagorio, "Die Andesite des Kaukasus," Dorpat, 1878, p. 18.

found in widely separated parts of the world, with a truly remarkable persistence of characteristics.

A glance at the rocks which, according to the prevailing principles of classification, must be called augite-andesites, shows three subdivisions. At one extreme are those rocks upon whose characteristics the objections to the prevalent classification are grounded. These occurrences, united with the great majority of hornblende-biotite-andesites are usually characterized by a trachytic habitus. In these, feldspar is by far the dominant element, and often sanidin forms an important part of it. The structure of the groundmass is prevaillingly much more crystalline than in the so-called augite-andesites proper, and plagioclase is especially abundant in it. Quartz or tridymite is often present.

At the other extreme are the rocks, comparatively few in number, which, though possessing the basaltic habitus, are still strictly andesites through the absence or rarity of olivine. As examples of this class may be cited numerous rocks of the Auvergne described by von Lasaulx,²² and the rock from the Löwenburg in the Siebengebirge, commonly called "dolerite," but classified by Rosenbusch²³ with the augite-andesites. Between these are the normal "augite-andesites."

Chemically considered, the andesites with trachytic habitus are somewhat different from the normal augite-andesite. The percentage of silica is noticeably higher. Thus Lagorio²⁴ states concerning the andesites of the Caucasus that they vary in amount of silica from 61.33 to 77.40 per cent. Doelter²⁵ gives the variation in quartz-bearing andesites of Transylvania and Hungary as from 57 to 69 per cent. The typical augite-andesites seldom contain more than 60 per cent. silica, and the average runs quite constantly between 56 and 58 per cent.²⁶

The separation of the normal augite-andesites from those with trachytic habitus has often been justified by their geognostic relations. Near Schemnitz, in Hungary, where both types are abundantly represented, the augite-andesites proper were long ago distinguished as "*trachytes semivitreux*" by Bendant. Von Andrian states as a result of the geological survey of the region in 1865, speaking of the "*jüngere andesite*," that "*Übergänge in den (amphibol-) andesit lassen sich auch da, wo beide neben einander vorkommen, nicht nachweisen.*" (Cited as above by Hussak (*l. c.*)) In many other places the normal augite-andesite has been distinguished from the "trachytic" variety, as younger.

²² A. v. Lasaulx, Neues Jahrbuch für Min., etc., 1870, p. 693, and 1871, p. 673.

²³ Rosenbusch, Massige Gesteine, p. 416.

²⁴ A. Lagorio, "Die Andesite des Kaukasus," Dorpat, 1878, p. 13.

²⁵ C. Doelter, Tschermak's Min. und pet. Mitth., V. 1873, p. 51.

²⁶ F. Zirkel, Mic. Pet. of 40th Par., p. 222; also the well-known tables compiled by J. Roth.

RESULTS.

1. An apparently typical augite-andesite from the Buffalo Peaks is found to contain *hypersthene* as its chief pyroxenic constituent.

2. The remaining pyroxene of this rock must, from its optical behavior, be considered either as *triclinic* in crystallization, or as augite with anomalous action through some unexplained cause. The occurrence of apparent twins and of intergrowth with hypersthene render the *former* explanation most plausible. Pyroxene with similar behavior was found in many well-known augitic rocks.

3. In all so-called "augite-andesites" of the truly typical character which are accessible to the writer, twenty-eight in number, the greater part of the pyroxene corresponds optically and structurally to the hypersthene of the Buffalo Peaks rock.

4. There is nothing in the current description of the "augite-andesites" referred to, which can be regarded as *positive* evidence that hypersthene is not abundant in them.

5. In all so-called "hornblende-andesites" with a structure similar to that of the typical "augite-andesites" which were examined, some fifteen in number, the same apparent hypersthene is more or less abundant.

6. The pyroxene of those andesites with "trachytic habitus" seems to be normal augite.

7. The conclusion is that the chief subdivision of the augite-andesites may much more properly be called *hypersthene-andesite*. To this latter group are to be added certain rocks containing hypersthene, which have been classed with the hornblende-andesites. A separation of the remaining andesites into augite and hornblende-biotite bearing groups does not appear justifiable.

It does not seem probable that future investigations will show the occurrence of hypersthene to be so closely connected with a certain structural form as is indicated by the preceding observations. If, however, it should prove to be the case, the group of the hypersthene-andesites will be one of the best defined in petrography.

It is hoped that the correctness or falsity of the above conclusion will be speedily settled by other determinations of the nature of the pyroxene in the so-called augite-andesites.

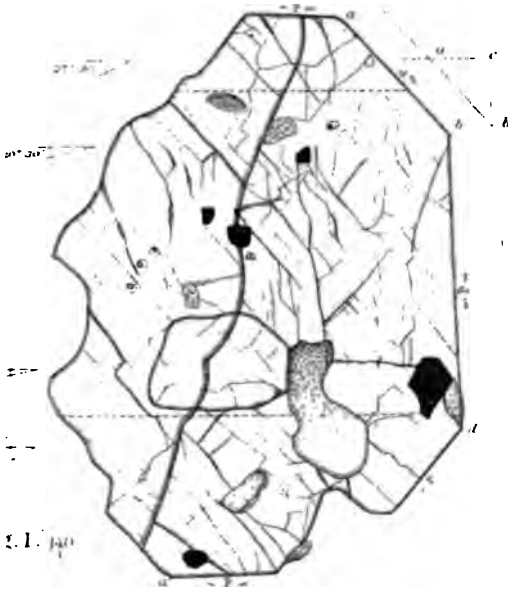


Fig. 2. 140



Fig. 4. 140

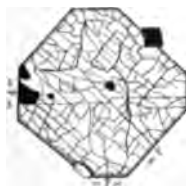


Fig. 7. 42

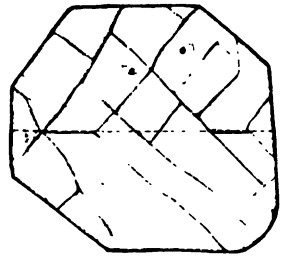


Fig. 3. 140

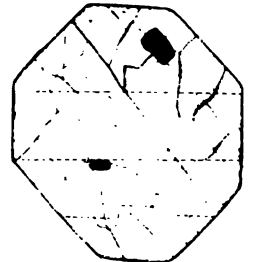


Fig. 6. 140



Fig. 5. 140



Fig. 8. 43



Fig. 9. 43

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DEPARTMENT OF THE INTERIOR

BULLETIN

OF THE

UNITED STATES

GEOLOGICAL SURVEY

No. 2

**GOLD AND SILVER CONVERSION TABLES, GIVING THE COINING VALUES
OF TROY OUNCES OF FINE METAL, AND THE WEIGHTS OF
FINE METAL REPRESENTED BY GIVEN SUMS
OF UNITED STATES MONEY**

WASHINGTON
GOVERNMENT PRINTING OFFICE
1883

ADVERTISEMENT.

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II. Report of the Director of the United States Geological Survey for 1880-'81, by J. W. Powell, 8°, Washington, 1882, iv, 588 pp., 61 plates, 1 map.

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Report of the Director, pp. i-iv, plates 1-7.

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The Physical Geology of the Grand Cañon District, by Capt. C. E. Dutton, pp. 47-166, plates 10-36.

Contributions to the History of Lake Bonneville, by G. K. Gilbert, pp. 167-200, plates 37-43.

Abstract of Report on the Geology and Mining Industry of Leadville, Colorado, by S. F. Emmons, pp. 201-290, plates 44 and 45.

A Summary of the Geology of the Comstock Lode and the Washoe District, by George F. Becker, pp. 291-330, plates 46 and 47.

Production of Precious Metals in the United States, by Clarence King, pp. 331-401, plates 48-53.

A New Method of Measuring Heights by means of the Barometer, by G. K. Gilbert, pp. 403-563, plates 54-61.

Index, pp. 567-588.

The Third and Fourth Annual Reports are now in press.

MONOGRAPHS.

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BULLETIN UNITED STATES GEOLOGICAL SURVEY.

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V. Copper-bearing Rocks of Lake Superior, by Professor R. D. Irving. In press.

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Dinocerata. A monograph on an extinct order of Ungulates, by Prof. O. C. Marsh. In press.

Sauropoda, by Prof. O. C. Marsh. In preparation.

Stegosauria, by Prof. O. C. Marsh. In preparation.

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1. On Hypersthene-Andesite and on Triclinic Pyroxene in Aegitic Rocks, by Whitman Cross, with a Geological Sketch of Buffalo Peaks, Colorado, by S. F. Emmons, Washington, 1883. pp. 1-42, 2 plates, 8^o. Price ten cents.

The following paper forms No. 2. Its price is five cents.

Correspondence relating to the publications of the Survey, and all remittances, should be addressed to the

DIRECTOR OF THE UNITED STATES GEOLOGICAL SURVEY,

Washington, D. C.

WASHINGTON, D. C., August 24, 1883.

DEPARTMENT OF THE INTERIOR

BULLETIN

OF THE

UNITED STATES

GEOLOGICAL SURVEY

No. 2



WASHINGTON
GOVERNMENT PRINTING OFFICE
1883

UNITED STATES GEOLOGICAL SURVEY
J. W. POWELL DIRECTOR

GOLD AND SILVER CONVERSION TABLES

GIVING THE
COINING VALUES OF TROY OUNCES OF FINE METAL, AND THE
WEIGHTS OF FINE METAL REPRESENTED BY GIVEN
SUMS OF UNITED STATES MONEY

COMPUTED BY
ALBERT WILLIAMS, Jr.,
CHIEF OF DIVISION OF MINING STATISTICS AND TECHNOLOGY



WASHINGTON
GOVERNMENT PRINTING OFFICE
1883

GOLD. OUNCES TO DOLLARS.

[1 ounce Troy = \$20.671834.]

Ounces.	Dollars.	Ounces.	Dollars.	Ounces.	Dollars.	Ounces.	Dollars.
1	20.671834	51	1,054.268534	100	2,067.1834	5,100	105,426.3534
2	41.343668	52	1,074.935368	200	4,134.3668	5,200	107,493.5368
3	62.015502	53	1,095.607202	300	6,201.5502	5,300	109,560.7202
4	82.687336	54	1,116.279036	400	8,268.7336	5,400	111,627.9036
5	103.359170	55	1,136.950870	500	10,335.9170	5,500	113,695.0870
6	124.031004	56	1,157.622704	600	12,403.1004	5,600	115,762.2704
7	144.702838	57	1,178.294538	700	14,470.2838	5,700	117,829.4538
8	165.374672	58	1,198.966372	800	16,537.4672	5,800	119,896.6372
9	186.046506	59	1,219.638206	900	18,604.6506	5,900	121,963.8206
10	206.718340	60	1,240.310040	1,000	20,671.8340	6,000	124,031.0040
11	227.390174	61	1,260.981874	1,100	22,739.0174	6,100	126,098.1874
12	248.062008	62	1,281.653708	1,200	24,806.2008	6,200	128,165.3708
13	268.733842	63	1,302.325542	1,300	26,873.3842	6,300	130,232.5542
14	289.405676	64	1,322.997376	1,400	28,940.5676	6,400	132,299.7376
15	310.077510	65	1,343.669210	1,500	31,007.7510	6,500	134,366.9210
16	330.749344	66	1,364.341044	1,600	33,074.9344	6,600	136,434.1044
17	351.421178	67	1,385.012878	1,700	35,142.1178	6,700	138,501.2878
18	372.093012	68	1,405.684712	1,800	37,209.3012	6,800	140,568.4712
19	392.764846	69	1,426.356546	1,900	39,276.4846	6,900	142,635.6546
20	413.436680	70	1,447.028380	2,000	41,343.6680	7,000	144,702.8380
21	434.108514	71	1,467.700214	2,100	43,410.8514	7,100	146,770.0214
22	454.780348	72	1,488.372048	2,200	45,478.0348	7,200	148,837.2048
23	475.452182	73	1,509.043882	2,300	47,545.2182	7,300	150,904.3882
24	496.124016	74	1,529.715716	2,400	49,612.4016	7,400	152,971.5716
25	516.795850	75	1,550.387550	2,500	51,679.5850	7,500	155,038.7550
26	537.467684	76	1,571.059384	2,600	53,746.7684	7,600	157,105.9384
27	558.139518	77	1,591.731218	2,700	55,813.9518	7,700	159,173.1218
28	578.811352	78	1,612.403052	2,800	57,881.1352	7,800	161,240.3052
29	599.483186	79	1,633.074886	2,900	59,948.3186	7,900	163,307.4886
30	620.155020	80	1,653.746720	3,000	62,015.5020	8,000	165,374.6720
31	640.826854	81	1,674.418554	3,100	64,082.6854	8,100	167,441.8554
32	661.498688	82	1,695.090388	3,200	66,149.8688	8,200	169,509.0388
33	682.170522	83	1,715.762222	3,300	68,217.0522	8,300	171,576.2222
34	702.842356	84	1,736.434056	3,400	70,284.2356	8,400	173,643.4056
35	723.514190	85	1,757.105890	3,500	72,351.4190	8,500	175,710.5890
36	744.186024	86	1,777.777724	3,600	74,418.6024	8,600	177,777.7724
37	764.857858	87	1,798.449558	3,700	76,485.7858	8,700	179,844.9558
38	785.529692	88	1,819.121392	3,800	78,552.9692	8,800	181,912.1392
39	806.201526	89	1,839.793226	3,900	80,620.1526	8,900	183,979.3226
40	826.873360	90	1,860.465060	4,000	82,687.3360	9,000	186,046.5060
41	847.545194	91	1,881.136894	4,100	84,754.5194	9,100	188,113.6894
42	868.217028	92	1,901.808728	4,200	86,821.7028	9,200	190,180.8728
43	888.888862	93	1,922.480562	4,300	88,888.8862	9,300	192,248.0562
44	909.560696	94	1,943.152396	4,400	90,956.0696	9,400	194,315.2396
45	930.232530	95	1,963.824230	4,500	93,023.2530	9,500	196,382.4230
46	950.904364	96	1,984.496064	4,600	95,090.4364	9,600	198,449.6064
47	971.576198	97	2,005.167898	4,700	97,157.6198	9,700	200,516.7898
48	992.248032	98	2,025.839732	4,800	99,224.8032	9,800	202,583.9732
49	1,012.919866	99	2,046.511566	4,900	101,291.9866	9,900	204,651.1566
50	1,033.591700	100	2,067.183400	5,000	103,359.1700	10,000	206,718.3400

SILVER. DOLLARS TO OUNCES.

[1 dollar=0.773455023513 ounce Troy.]

Dollars.	Ounces.	Dollars.	Ounces.	Dollars.	Ounces.	Dollars.	Ounces.
1	0.77346	51	39.44821	100	77.34550	5,100	3,944.02082
2	1.54691	52	40.21966	200	154.69100	5,200	4,021.96612
3	2.32037	53	40.99312	300	232.03651	5,300	4,099.31162
4	3.09382	54	41.76657	400	309.38201	5,400	4,176.65713
5	3.86728	55	42.54003	500	386.72751	5,500	4,254.00263
6	4.64073	56	43.31348	600	464.07301	5,600	4,331.34813
7	5.41419	57	44.08694	700	541.41852	5,700	4,408.69363
8	6.18764	58	44.86039	800	618.76402	5,800	4,486.03914
9	6.96110	59	45.63385	900	696.10952	5,900	4,563.38464
10	7.73455	60	46.40730	1,000	773.45502	6,000	4,640.73014
11	8.50801	61	47.18076	1,100	850.80053	6,100	4,718.07564
12	9.28146	62	47.95421	1,200	928.14603	6,200	4,795.42115
13	10.05492	63	48.72767	1,300	1,005.49153	6,300	4,872.76665
14	10.82837	64	49.50112	1,400	1,082.83703	6,400	4,950.11215
15	11.60183	65	50.27458	1,500	1,160.18254	6,500	5,027.45765
16	12.37528	66	51.04803	1,600	1,237.52804	6,600	5,104.80316
17	13.14874	67	51.82149	1,700	1,314.87354	6,700	5,182.14866
18	13.92219	68	52.59494	1,800	1,392.21904	6,800	5,259.49416
19	14.69565	69	53.36840	1,900	1,469.56454	6,900	5,336.83966
20	15.46910	70	54.14185	2,000	1,546.91005	7,000	5,414.18516
21	16.24256	71	54.91531	2,100	1,624.25555	7,100	5,491.53067
22	17.01601	72	55.68876	2,200	1,701.60105	7,200	5,568.87617
23	17.78947	73	56.46222	2,300	1,778.94655	7,300	5,646.22167
24	18.56292	74	57.23567	2,400	1,856.29206	7,400	5,723.56717
25	19.33638	75	58.00913	2,500	1,933.63756	7,500	5,800.91268
26	20.10983	76	58.78258	2,600	2,010.98306	7,600	5,878.25818
27	20.88329	77	59.55604	2,700	2,088.32856	7,700	5,955.60368
28	21.65674	78	60.32949	2,800	2,165.67407	7,800	6,032.94918
29	22.43020	79	61.10295	2,900	2,243.01957	7,900	6,110.29469
30	23.20365	80	61.87640	3,000	2,320.36507	8,000	6,187.64019
31	23.97711	81	62.64986	3,100	2,397.71057	8,100	6,264.98569
32	24.75056	82	63.42331	3,200	2,475.05608	8,200	6,342.33119
33	25.52402	83	64.19677	3,300	2,552.40158	8,300	6,419.67670
34	26.29747	84	64.97022	3,400	2,629.74708	8,400	6,497.02220
35	27.07093	85	65.74368	3,500	2,707.09258	8,500	6,574.36770
36	27.84438	86	66.51713	3,600	2,784.43808	8,600	6,651.71320
37	28.61784	87	67.29059	3,700	2,861.78359	8,700	6,729.05870
38	29.39129	88	68.06404	3,800	2,939.12909	8,800	6,806.40421
39	30.16475	89	68.83750	3,900	3,016.47459	8,900	6,883.74971
40	30.93820	90	69.61095	4,000	3,093.82009	9,000	6,961.09521
41	31.71166	91	70.38441	4,100	3,171.16560	9,100	7,038.44071
42	32.48511	92	71.15786	4,200	3,248.51110	9,200	7,115.78622
43	33.25857	93	71.93132	4,300	3,325.85660	9,300	7,193.13172
44	34.03202	94	72.70477	4,400	3,403.20210	9,400	7,270.47722
45	34.80548	95	73.47823	4,500	3,480.54761	9,500	7,347.82272
46	35.57893	96	74.25168	4,600	3,557.89311	9,600	7,425.16823
47	36.35239	97	75.02514	4,700	3,635.23861	9,700	7,502.51373
48	37.12584	98	75.79859	4,800	3,712.58411	9,800	7,579.85923
49	37.89930	99	76.57205	4,900	3,789.92962	9,900	7,657.20473
50	38.67275	100	77.34550	5,000	3,867.27512	10,000	7,734.55024

DEPARTMENT OF THE INTERIOR

BULLETIN

OF THE

UNITED STATES

GEOLOGICAL SURVEY

No. 3

ON THE FOSSIL FAUNAS OF THE UPPER DEVONIAN ALONG THE
MERIDIAN OF 76° 30' FROM TOMPKINS COUNTY N. Y.
TO BRADFORD COUNTY PA.

WASHINGTON
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1884



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- III. Third Annual Report of the United States Geological Survey, 1881-'82, by J. W. Powell. Washington, 1883. 8°. xviii, 564 pp. 67 pl. and maps.
- IV. Fourth Annual Report of the United States Geological Survey, 1882-'83, by J. W. Powell. Washington, 1884. 8°. xii, 473 pp. 85 pl. and maps.

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- VI. Older Mesozoic Flora of Virginia, by Prof. William M. Fontaine. In press.
- VII. Silver-lead Deposits of Eureka, Nevada, by Joseph Story Curtis. In press.
- VIII. Paleontology of Eureka District, Nevada, by Charles Doolittle Walcott. In press.
- Geology and Mining Industry of Leadville, with atlas, by S. F. Emmons. In preparation.
- Geology of the Eureka Mining District, Nevada, with atlas, by Arnold Hague. In preparation.
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- Iron of the United States, by Prof. R. Pumpelly. In preparation.
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- Dinocerata. A monograph on an extinct order of Ungulates, by Prof. O. C. Marsh. In press.
- Sauropoda, by Prof. O. C. Marsh. In preparation.
- Stegosauria, by Prof. O. C. Marsh. In preparation.

Of these Monographs, Nos. II and III are now published, viz:

Bull. No. 3.

ADVERTISEMENT.

II. Tertiary History of the Grand Cañon District, with atlas, by C. E. Dutton, Capt. U. S. A. 1882. 4°. 264 pp. 42 pl. and atlas of 26 double sheets folio. Price \$10.12.

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2. Gold and Silver Conversion Tables, giving the coining value of Troy ounces of fine metal, &c., by Albert Williams, jr. 1883. 8°. ii, 8 pp. Price 5 cents.

3. On the Fossil Faunas of the Upper Devonian along the meridian of 76° 30', from Tompkins Co., N. Y., to Bradford Co., Pa., by Henry S. Williams. 1884. 8°. 36 pp. Price 5 cents.

STATISTICAL PAPERS.

A fourth series of publications having special reference to the mineral resources of the United States is contemplated; of that series the first has been published, viz: Mineral Resources of the United States, by Albert Williams, jr. 1883. 8°. xvii, 813 pp. Price 50 cents.

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DIRECTOR OF THE UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C.

WASHINGTON, D. C., May 1, 1884.

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ANNUAL REPORTS.

From the above it will be seen that only the Annual Reports, which form parts of the reports of the Secretary of the Interior and are printed as executive documents, are available for gratuitous distribution. A number of these are furnished the Survey for its exchange list, but the bulk of them are supplied directly, through the document rooms of Congress, to members of the Senate and House. Except, therefore, in those cases in which an extra number is supplied to this Office by special resolution, application must be made to members of Congress for the Annual Reports, as for all other executive documents.

Of these Annuals there have been already published:

- I. First Annual Report to the Hon. Carl Schurz, by Clarence King. Washington, 1880. 8°. 79 pp. 1 map.—A preliminary report describing plan of organization and publications.
- II. Report of the Director of the United States Geological Survey for 1880-'81, by J. W. Powell. Washington, 1882. 8°. 1v, 588 pp. 61 pl. 1 map.
- III. Third Annual Report of the United States Geological Survey, 1881-'82, by J. W. Powell. Washington, 1883. 8°. xviii, 564 pp., 67 pl. and maps.
- IV. Fourth Annual Report of the United States Geological Survey, 1882-'83, by J. W. Powell. Washington, 1884. 8°. xii, 473 pp. 85 pl. and maps.

MONOGRAPHS.

The Monographs of the Survey are printed for the Survey alone, and can be distributed by it only through a fair exchange for books needed in its library, or through the sale of those copies over and above the number needed for such exchange. They are not for gratuitous distribution.

So far as already determined upon, the list of these Monographs is as follows:

- I. The Precious Metals, by Clarence King. In preparation.
- II. Tertiary History of the Grand Cañon District, with atlas, by Capt. C. E. Dutton. Published.
- III. Geology of the Comstock Lode and Washoe District, with atlas, by George F. Becker. Published.
- IV. Comstock Mining and Miners, by Elliot Lord. In press.
- V. Copper-bearing Rocks of Lake Superior, by Prof. R. D. Irving. In press.
- VI. Older Mesozoic Flora of Virginia, by Prof. William M. Fontaine. In press.
- VII. Silver-lead Deposits of Eureka, Nevada, by Joseph Story Curtis. In press.
- VIII. Paleontology of Eureka District, Nevada, by Charles Doolittle Walcott. In press.
- Geology and Mining Industry of Leadville, with atlas, by S. F. Emmons. In preparation.
- Geology of the Eureka Mining District, Nevada, with atlas, by Arnold Hague. In preparation.
- Coal in the United States, by Prof. R. Pumpelly. In preparation.
- Iron of the United States, by Prof. R. Pumpelly. In preparation.
- Lesser Metals and General Mining Resources, by Prof. R. Pumpelly. In preparation.
- Lake Bonneville, by G. K. Gilbert. In preparation.
- Dinocerata. A monograph on an extinct order of Ungulates, by Prof. O. C. Marsh. In press.
- Sauropoda, by Prof. O. C. Marsh. In preparation.
- Stegosauria, by Prof. O. C. Marsh. In preparation.

Of these Monographs, Nos. II and III are now published, viz:

Bull. No. 3.

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II. Tertiary History of the Grand Cañon District, with atlas, by C. E. Dutton, Capt. U. S. A. 1892. 4°. 284 pp. 42 pl. and atlas of 26 double sheets folio. Price \$22.12.

III. Geology of the Comstock Lode and Washoe District, with atlas, by George F. Becker. 1892. 4°. 422 pp. 7 pl. and atlas of 21 sheets folio. Price \$11.

Nos. IV, V, VI, VII, and VIII are in press and will appear in quick succession. The others, to which numbers are not assigned, are in preparation.

BULLETINS.

The Bulletins of the Survey will contain such papers relating to the general purpose of its work as do not come properly under the heads of ANNUAL REPORTS or MONOGRAPHS.

Each of these Bulletins will contain but one paper, and be complete in itself. They will, however, be numbered in a continuous series, and will in time be united into volumes of convenient size. To facilitate this, each Bulletin will have two paginations, one proper to itself and another which belongs to it as part of the volume.

Of this series of Bulletins, Nos. 1, 2, and 3 are already published, viz:

1. On Hypersthene-Andesite and on Triclinic Pyroxene in Angitic Rocks, by Whitman Cross, with a Geological Sketch of Buffalo Peaks, Colorado, by S. F. Emmons. 1892. 8°. 49 pp. 2 pl. Price 10 cents.

2. Gold and Silver Conversion Tables, giving the coining value of Troy ounces of fine metal, &c., by Albert Williams, jr. 1893. 8°. ii, 3 pp. Price 5 cents.

3. On the Fossil Faunas of the Upper Devonian along the meridian of 76° 30', from Tompkins Co., N. Y., to Bradford Co., Pa., by Henry S. Williams. 1894. 8°. 26 pp. Price 5 cents.

STATISTICAL PAPERS.

A fourth series of publications having special reference to the mineral resources of the United States is contemplated; of that series the first has been published, viz: Mineral Resources of the United States, by Albert Williams, jr. 1893. 8°. xvii, 613 pp. Price 50 cents.

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DIRECTOR OF THE UNITED STATES GEOLOGICAL SURVEY,
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UNITED STATES GEOLOGICAL SURVEY

J. W. POWELL DIRECTOR

ON

THE FOSSIL FAUNAS

OF THE

UPPER DEVONIAN

ALONG THE MERIDIAN OF $76^{\circ} 30'$ FROM TOMPKINS COUNTY, N. Y.,
TO BRADFORD COUNTY, PA.

BY

HENRY S. WILLIAMS



WASHINGTON

GOVERNMENT PRINTING OFFICE

1884

ON THE FOSSIL FAUNAS OF THE UPPER DEVONIAN.

By HENRY S. WILLIAMS.

The precise order with which geological faunas have made their appearance and succeeded one another is little enough understood for any long period of time, but for no period of geological history is there greater perplexity in regard to this order, in proportion to the knowledge we have of the species themselves, than for that filling the interval between the Upper Silurian and the Coal Measures of the Carboniferous.

This perplexity exists, not only for the American series, but in Great Britain—in Europe—wherever large areas have been geologically surveyed there are problems in regard to the relations of these faunas still unsolved.

In America the sections of the Devonian and the Sub-Carboniferous deposits are alike in no two States. In one section the changes in stratigraphical conditions are accompanied by well-marked faunas; in another, the species making up the faunas appear under different combinations, and species characteristic of distinct zones in one series will be found mingled in a common fauna of another.

That there is some explanation of these differences, some clew to this apparent confusion, is certainly to be presumed.

As the questions involved concern the laws of range and distribution of organisms, and thus are based upon the effects of changed or changing conditions of environment upon the organisms, we naturally look to the zoology of living forms for suggestions.

We find that in the present ocean the depth of water, the temperature, and the degree of saltness and the freedom from suspended impurities have all a marked influence upon the normal fauna of every part of the ocean.

Further, we find that on the two sides of the ocean—on opposite coasts of a continent—and even along a continuous coast-line, in two regions separated by a few degrees latitude, the faunas are characteristically different, and when these geographical areas are far separated, although under similar conditions otherwise, the faunas may contain scarcely a single species in common.

The revelations made by deep-sea dredging are also very suggestive. They have shown us that with all these differences in upper faunas, in the depths of the ocean species may range from one quarter of the

globe to the opposite quarter with scarcely a varietal modification, and when the physical conditions have been continuous, geological ages are not too long for the perpetuation of species without important modification.

Again, the wonderful effects upon the distribution of faunas produced by ocean currents is brought forcibly to our attention by the reports of our Fish Commission. Their investigations reveal the existence of an abundant fauna within a hundred miles of the New England coast, entirely distinct from the fauna prevailing all along that part of the coast out to deep water; and further, as Professor Verrill informs me, this unique fauna, which, at the time of its first discovery was composed of a large number of species and a great abundance of individuals, has now apparently left the region altogether.

From this we learn that in a very small geographical area we might find the remains of two entirely distinct faunas, preserved in two strata of a continuous formation, lying the one immediately upon the other, conformably, yet geologically entirely contemporaneous.

In the light of such facts the study of fossil faunas becomes an extremely complex problem.

The aggregation of species into faunas, the blending of one fauna with another, the rarity or abundance of particular species, variation in form or size or modification of specific characters, the extinction of old and the initiation of new forms—all these become the most delicate tests of change in the physical conditions, the record of which constitute the geological history of the earth.

For the correct solution of this problem the laws of geographical distribution form as important an element as geological sequence. The attempt to apply such principles to the study of the Devonian and Sub-Carboniferous deposits is no simple task, but the very fact that their faunas offer so great variation and difference in their combinations makes this series particularly attractive for the purpose.

In the eastern half of America are a dozen or so States in which more or less complete sections of the deposits, from the Niagara group to the Coal Measures, may be studied.

While our State surveys have been accurate and thorough for economical purposes, those engaged in the work have generally been satisfied with noting and describing the fossil species found in each geological formation, rarely are the complete faunas of any locality or stratum given in detail.

From our present literature it is difficult to ascertain anything beyond the general facts of the geographical distribution of fossil species; and the study of geological range is complicated by the uncertainties as to the precise equivalency of the deposits containing the fossils.

This study involves, therefore, not only an arduous review of the geological surveys of the several regions of the country, but requires

also a special preparation of long sections covering the whole series of deposits under consideration, and at such geographical intervals as will allow of the certain determination of stratigraphical equivalency between them.

In making such sections, it is important to note the exact order of the faunas and the abundance, rarity, difference in relative size, and any modification of form of the species contained in the fauna, together with the particular lithological character of the rock.

It was with such ideas in mind that I examined in the summer of 1882 a meridional section extending from Cayuga Lake southward to the first appearance of coal at the Barclay mine, in Southern Bradford County, Pennsylvania. This section, added to the well-known section exposed along the shores of Cayuga Lake, gives us a continuous series from the base of the Devonian to the coal lying above the first conglomerate of this meridian. I gave particular attention to the faunas marking the passage from the second Devonian Black Shale (the Genesee shale) through the "Portage," "Ithaca," and Chemung groups.

The precise thickness of the whole series must remain a matter of calculation. The numerous local sections were measured and may be put together, but the element of dip is not uniform, and can be reached only approximately.

The details of the stratigraphical characters constantly change, so that the sections of two ravines, within a few miles of each other, are quite different. Still, the general character of the rock masses and the prominent composition of the faunas are easily followed from one exposure to the next throughout the whole area examined.

The sequence of the faunas, which was particularly sought, was satisfactorily determined. I do not believe that the complete fauna of any particular zone has been given; but in the lists which follow all the characteristic species are undoubtedly included, and all the species thus far discovered in condition admitting of identification are also recorded.

It must be remembered that a great majority of the fossils of these Upper Devonian shales are in the condition of impressions, often very perfect, but many of them fragmentary. The section here examined lies between the third and fourth districts of the original State survey (see Vanuxem's *Geol. of N. Y.*, 3d Dist., 1842, p. 170), and both Professor Hall, who reported on the fourth district, and Mr. Vanuxem, who reported on the third, regarded it as a typical section, though in no report are we able to find a satisfactory description of it.

The present condition of the rocks presents a series of gentle undulations, with a general slight dip to the south (see *Proc. Am. Ass. Adv. Sc.*, Vol. XXXI., Pt. 2, p. 412); a continuation northward of the condition of things described in Report G, Second Geol. Surv. of Penn., p. 9, &c.

The average dip as estimated for this section is something over 25 feet per mile.

North of Ithaca, at Burdick's Glen, 4 miles from the southeast corner of Cayuga Lake, the Genesee shale appears capped by the sandstones and shales of the Portage group. At that point the top of the Genesee shale is about 60 feet above the lake level, or (376+60) approximately 440 feet above the sea level.

The fauna of this Black Shale contains, as was suggested by Professor Hall in his early study of these formations, several species of the fauna appearing in the Marcellus Black Shales which overlie the Corniferous limestone.

A comparative study of these and other faunas led me to infer that the Genesee fauna was merely a recurrence of the Marcellus fauna, a few species dropping out and a few being added, and that the same fauna did not become extinct with the incursion of sands and shales of the Portage group, but with some modifications continued to appear under favorable conditions after the Portage faunas were initiated. (See Recurrence of Faunas, Proc. Am. Ass. Adv. Sc., Vol. XXX, p. 186.) Evidence is also found of the recurrence of a partial Hamilton fauna just before the incursion of the fauna of the "Ithaca group" of Vanuxem.

These facts made it plain that over any particular area the faunas shifted back and forth with the advance of geological time. Hence I was led to the simple conception of a fauna as continuing on intact so long as the favorable conditions for its life continued, as shifting its habitat with the elevation or depression of the land with the advance or retrocession of the coast line. In such shifting and change of condition, one species after another may drop out and become extinct; others may suffer varietal modification, and, what is still more important, the sudden appearance of new forms may take place in the midst of the normal fauna—forms new to the locality only, or entirely new, so far as our knowledge of the fossils can tell us. Merely from the initiation of the new forms in the fauna we can gain no clew of its origin, but the study of its relations to allied forms of other faunas may enable us to decide whether it is a modification of some older form, or the forerunner of a new type, marking a later geological stage.

Thus our attention is called to the study of the typical forms of organisms with their variations—to associate their variable elements with locality or geological horizon, and thus to accumulate the elements for an historical account of organisms.

As we enter this field of investigation we soon find that specific names in palæontology have often been given under the influence of the belief in the old canon that each geological formation had its distinct set of organisms. Hence, when the boundary between two such divisions of the rocks is once established, the tendency has been strong to give separate specific names to representatives of the two formations,

and to define as specific the differences, which often prove to be little more than individual variations. It is therefore necessary to guard against deception caused by specific names.

In tracing the species of a single section backwards or forwards, we find at each stage a particular facies to the fauna, which suggests its nearest relation, and for this purpose varietal characters are especially valuable. For instance, in the Ithaca group the *Spirifera mesocostalis*, of the type "*prolata*" of Vanuxem or *D. acuminata* of Hall, is characteristic of the lower stage, while the higher, and particularly the Western New York variety, is Hall's typical *Sp. mesocostalis*. In the higher beds the two occur together, but the latter prevail; in the lower beds we never see the later variety. The varietal modification of the species then becomes a mark of the horizon. Many such cases might be mentioned, and the mere record of the species is not sufficient—the specimens should be examined in every case.

We have in the present section several clearly defined faunas of which I propose to give some account in this paper.

At the base of the Upper Devonian is the second appearance of the Devonian Black Shale. The limestone which underlies it is the Tully limestone. West of the Cincinnati axis there appears to be only a single mass of this Black Shale, and even in Ohio the separation of the Black Shales is not entire except in the eastern part, and there no limestone bed intervenes.

That these Black Shales were in some way associated with an elevation of the sea-bottom seems conclusive, from the relation they bear to limestone deposits below, and from the nature of the fauna and flora contained. Thus the Utica slates follow the Trenton limestone, the Marcellus the Corniferous limestone, the Genesee the Tully limestone, or where the Tully was wanting, the Hamilton itself is more or less calcareous.

The shales are mostly barren of marine fossils, and only rarely are distinct pieces of plant stems seen.

Lepidodendra and *Rhodeu* are occasionally found.

The fauna is usually found near the top, and all the species are delicate and mostly minute or small.

The species detected in this locality are as follows:

FAUNA OF No. 34 D., GENESEE SHALE.

Discina lodensis.

truncata.

Lingula spatulata.

concentrica.

Styliola fissurella.

Tentaculites gracilistriatus.

Orthoceras subulatum.

Leiorhynchus quadricostatus.

Lunulacardium fragile.

Cardiola speciosa.

Ambocelia umbonata.

Chonetes lepida.

Goniatites (a fragment).

Rhodesa pinnata (stems).

Phthonia lirata.

The more abundant species are:

Discina lodensis.

Styliola fissurella.

Chonetes lepida.

The variety of *D. lodensis*, called by Hall *D. truncata*, is quite common. Comparison of numerous specimens leads me to believe that this is but a varietal modification of *D. lodensis*.

The rest of the species are rare.

Immediately above the Genesee shale are two thick sandstone layers separated by a few inches of shale, the whole about 4 feet thick.

In these sands and shales there are great numbers of pyrite nodules from the size of a pea, or smaller, to an inch and over in length. No fossils were observed in these first beds.

Following the sandstone are the sandy shales, characteristic of the Portage group.

Above the sandstone there occur some masses of black fissile shale resembling the Genesee shale, but neither so dark nor so soft. The siltic predominates and the fauna is sparse, and, so far as observed, never bears the *Discina* or *Lingula* of the beds below.

Some lighter-colored, greenish, soft shales appear above, and in them occurs the first distinct Portage fauna.

The first species seen are *Cardiida*—the large forms, originally described as *Pinnopsis ornatum* and *P. acutirostra*—and on passing upward we soon meet *Cardiola speciosa*, *Goniatites*, *Hyolithes*, and *Coleolus*, and after passing fifty or a hundred feet of blue-gray, sandy shales, with some light olive argillaceous shale, and an occasional dark streak, the *Nuculas* and *Lunulacardium fragile* appear.

The passage is gradual from the lower to the upper of these subfaunas, and there is no distinct stratigraphical division of the series until we pass the brachiopod fauna, which is unique in holding *Spirifera laevis* in abundance. This fauna occurs about 200 feet above the base of the Portage formation in this meridian. About 50 feet below it, or say 150 feet above the Genesee shale, is a sparse but very interesting fauna, characterized by the abundance of a large *Cladochonus* (McCoy), a genus closely allied to *Aulopora*, of an undescribed species, which I have figured and described in MSS.

This is the first fauna which is distinct from the general Portage fauna with which it is interstratified. The fauna is that of Station No. 48 of my

records, and occurs in a dark, blue-gray shale, weathering brown, less arenaceous than the ordinary Portage shales, and outcropping along the side of Cayuga Lake Railroad, a little north of McKinney's Station.

FAUNA OF No. 48.

- Cladochonus* (McCoy), sp.
Spirifera subumbona, Hall.
Chonetes lepida.
Leiorhynchus mesocostalis.
Grammysia subarcuata.
Cardiola speciosa.
Goniatites complanatus ?
 ? *Leda curta*.
Palæoneilo filosa ?
Nucula Randalli (or ? new).
Nuculites oblongatus.
Strophodonta mucronata.
Coleolus aciculum.
Orthoceras = a small form (= ? *O. bebryx*).
 Arm of a small crinoid.
 Stem of *Rhodea*.
 A small Lamellibranch (= ? *Macrodon*).

This fauna (of Station No. 48), coming as it does entirely below the *Spirifera lævis* fauna, is remarkable as holding several species which are generally regarded as characteristic Chemung species.

The *Strophodonta mucronata* is particularly to be noted, but the entire facies of the fauna reminds us of the Ithaca group rather than anything below. The *Spirifera subumbona*, Hall, is well preserved, and exhibits the convex dorsal valve and the surface-markings of that species. That this is identical with the forms occurring in the higher Chemung faunas and called *Ambocælia umbonata* var. *gregaria* of Hall, I have no doubt. It is also possible that the British and European *Spirifera urti*, Fleming, is specifically identical. This form is a characteristic of the Upper Devonian faunas, where it is generally associated with our representatives of "*Spirifera disjuncta* and *Orthis interlineata*," the species mentioned by Murchison as its common associates in the Barnstaple, Marwood, and Pilton series of North Devon. Its surface-markings, which are quite like those of *Spirifera lævis* (occurring just above it and but once elsewhere in the series for this meridian) lead us to associate it with the early representatives of the Carboniferous faunas.

Cladochonus is also, so far as recorded, a Carboniferous form. (See Murchison's *Siluria*, 2d ed., p. 299; Davidson's *Brachiopoda*, Pt. VI, p. 41; Hall, *Geol. N. Y.*, 4th Dist., pp. 234, 261.)

The species collected from station 48, are all small and delicate, and some of them are mere fragments.

The *Cladochonus* and the *Spirifers* are the most abundant, and show the result of favorable conditions for growth.

The species, both below and above this stratum, are rare and generally fragile, and consist of pelagic forms, such as *Pteropods* and *Cephalopods* with a characteristic fauna of *Lamellibranchiata*, but scarcely a trace of *Brachiopods*.

The next distinct fauna we recognize is that of Stations No. 1 and No. 4, two points on opposite sides of the valley in which Ithaca is situated. Station No. 1 is at the foot of Fall Creek on the east side, and No. 4 is at the southwest corner of Cayuga Lake. A few other exposures of the same horizon have been examined, but these two are characteristic.

The prominent species of this fauna are—

Spirifera laevis, Hall, and *Palaeoneilo filosa*, Con.

Lunulacardium fragile is generally present but not abundant, and *Taxocrinus Ithacensis* is represented quite abundantly by fragments of the stem and by an occasional perfect head.

The other species named are representative of the fauna but are less frequently obtained.

In this list, as in others which follow, some species are recorded from fragmentary specimens from which only the generic characters can be determined with satisfaction.

FAUNA OF STATION No. I, B AND D.*

Spirifera laevis.

Palaeoneilo filosa.

Lunulacardium fragile.

Chonetes lepida.

Taxocrinus Ithacensis.

Goniatites complanatus var. *perlatus*.

sinuosus.

discoideus.

Porcellia Nais.

Orthoceras pectorator.

anguis.

Coleoprion sp.

Cardiola speciosa.

Styliola fissurella.

Hyolithes acilis.

Aviculopecten sp.

Oyrtina Hamiltonensis.

Grammysia subarcuata.

Modiomorpha subalata.

? *Aulopora* or *Cladochonus*, fragments.

Palaeoneilo constricta.

* The species recorded in these lists are arranged in the order of their relative abundance at each station, the more common being placed first.

Cardiola transversa?
Leda perstriata.
Pleurotomaria sp.
Discina sp.
Leiorhynchus mesocostalis.
Crania sp.
 "Lycopodites" *Vanuxemi.*
Leperditia.
Rhodea stems.
 Fish bones, fragments.
Stictopora Meeki.

Some other species are recorded from the "Portage" at Ithaca, and may belong to this fauna, but the list here given includes only species known to belong to this particular horizon.

As far as known this fauna does not occur west of Seneca Lake, and, taken as a whole, it is characteristic of the eastern extension of the Portage group. I would call particular attention to the absence of *Præcardium* (*Cardium*?) *vetusta* and *Cardiomorpha* ("Ungulina") *suborbicularis*. I have not observed either of these species in any part of the present meridional section, although they are frequently met with in the Portage formation a little farther west.

Three of the species will be remembered as common in the higher Chemung faunas (*Cyrtina Hamiltonensis*, *Grammysia subarcuata*, and *Modiomorpha subalata*), but they occur also below in the Hamilton group, or are represented by a closely allied form, as *Grammysia arcuata*.

Spirifera lævis is a specially interesting form. It appears to be quite limited both in range and distribution. A closely allied form, *Sp. maia*, occurs in the lower Devonian of Ohio and Ontario, and a similar form appears in the Devonian of the far West. It is closely allied, if not identical, with *Spirifera glabra* of the British Carboniferous, and appears to link that species with the Devonian *Sp. curvata*. (See Davidson, Supl. Brit. Dev. Brachiopoda, p. 32.)

Tracing the faunas upward, after passing the *Spirifera lævis* stage, the shales gradually lose their coarse bedded character, the laminæ become finer and more fissile, and about 30 feet higher up the rocks assume a decided fissile character—are composed of a dark, nearly black, shale, weathering reddish-brown from iron stain, and occasionally carry lenticular beds of very tough, siliceous sandstone. These sandstone masses I have described elsewhere as channel-fillings. (See Am. Jour. Sc., Vol. XXI, p. 318.)

The dark, fissile, argillaceous shales are generally about 20 feet thick; no fossils appear at their base, but toward the top are often found great numbers of *Lingulas* and a few other delicate species.

The famous Lycopodites beds of Professor Hall lie in these shales, where great numbers of *L. Vanuxemi* in very perfect condition occur, with stems of *Rhodea* and other plants, and large fish-bones.

Numerous exposures of this stage are seen in the ravines about Ithaca. My Station No. 6 gives a good exhibition of the fauna. In the following list the species named are from Station No. 6 and equivalent strata within a radius of a mile or so about it:

FAUNA OF STATION No. 6.

- Lingula complanata*.
Ptilophyton (*Lycopodites*) *Vanuxemi*.
Leiorhynchus mesocostalis and vars.
Lunulacardium fragile.
Cardiola speciosa (rare).
Lingula punctata.
 spatulata var.
 ligea.
Poteriocrinus, stems.
Productella, a minute species.
Styliola fissurella.
Rhodea stems.
 † *Spirorbis*.
Rhachiopteris punctata.
 † *Psilophyton*.
Productella truncata.
Palæoneilo filosa.
 brevis.
Leptodesma sp.
Goniatites complanatus.
Microdon gregaria.
Orthoceras pectorator.
Loxonema sp.
Rhynchonella eximia (young).
Pleurotomaria capillaria.
Phthonia lirata.

In this fauna *Lingula complanata* and *Lunulacardium fragile* are the characteristic species, and are generally abundant.

The *Ptilophyton* Dawson = *Lycopodites* is abundant in some localities, and the *Leiorhynchus* is also very abundant in some layers, but does not appear in all the exposures. The other species are rare; some of them are known only by fragments.

The *Leiorhynchus* is very variable, and is a thin, fragile shell in these shales, and often distorted.

Specimens occur which present more or less fully the distinctive characters of *L. limitaris*, of *L. quadricostata*, or of *L. mesocostalis*.

A comparative study of the specimens from various stages of the Devonian has led me to regard all the species of *Leiorhynchus*, of the New York Devonian at least, as varieties of a common form, whose plasticity has not permanently ceased at any of the horizons in which it

occurs. The different varieties appear to be closely related to the nature of the rock containing them; but, while the majority of individuals in any particular stratum are of one variety, in most every case some individuals present the characteristics of the other varieties.

Lingula complanata is of the type of the Ohio species, *L. membranacea* and *L. manni*; and the Brazilian species, *L. stauntoniana*, Rathbone, 1874, is indistinguishable from some specimens of *L. complanata*, and also occurs in a dark fissile shale.

This form is entirely distinct from the *L. ligea* and *L. ligea* var. of Hall, in so far as description and illustration go, but it appears to have been included among the typical specimens now in the American Museum.

A couple of specimens, agreeing entirely with the figures and descriptions of the *L. ligea* H. in the New York reports, have been found in these beds associated with the others; but the thin, almost perfectly flat character of *L. complanata* is characteristic of it, as seen in many hundred specimens. The theory that the latter is but a crushed *L. ligea* is contradicted by the observation that the flattening of an oval convex form, like *L. ligea* would increase the width near the center where the shell is most convex, while near the front the width would be little changed, so the sides would be even more curved, instead of being nearly straight as in the form called *L. complanata*.

As we pass above this soft shale, which is generally terminated by a 6 to 8 inch stratum of sandstone, the fauna changes.

A layer of concretions, like cobble-stones, occurs a few feet above the sandstone; this is followed by a thin stratum of arenaceous shale, with an abundance of *Lingula punctata*.

A few feet higher occurs my fauna No. 14 N—a remarkable recurrent Hamilton fauna, traces of which have been seen in several localities.

The species identified are as follows:

FAUNA OF STATION No. 14 N.

- Spirifera fimbriata.*
- angusta.*
- Pleurotomaria capillaria.*
- Ambocoelia umbonata.*
- Loxonema delphicola.*
- Leiorhynchus mesocostalis.*
- Rhynchonella contracta.*
- Orthoceras* sp.
- Avicula subdecussata.*
- Microdon tenuistriata?*
- Modiomorpha complanata.*
- Palæoneilo* sp.
- Lingula punctata.*
- L.* sp.

The shales above Station No. 14 N become coarse and blocky, and so continue for hundreds of feet, interrupted by occasional thin beds of soft argillaceous shale and layers of hard sand.

The fauna characteristic of the "Ithaca group," of the early New York reports, begins to appear at this point, with *Leiorrhynchus* the first genus to be abundantly represented.

The form *L. mesocostalis* is more common in the soft shales, but in the more arenaceous beds the convex forms *L. globuliformis* and *L. Kelloggi* appear; but here, as in lower stages, the presence or absence of lateral plications, the number of folds on the sinus, or its prominence, and the general form of the shell are characters which vary in almost every handful of specimens, and lead us to believe that the representatives of the genus *Leiorrhynchus*, found in the Devonian of New York at least, offer no better claim to specific distinction than do the various forms of *Atrypa reticularis*, although the variations of form and the relative prevalence of certain variations are valuable and, we believe, sensitive indicators of changed conditions of the environment.

There is a general rule which prevails among the forms called *Leiorrhynchus*. In the early stages of the Devonian—the Marcellus shale or below—the majority of specimens are plicated over the sinus and way to the lateral margin of the shell, giving us typical *L. limitaris*, but even in the Marcellus, individuals, especially as they increase in size, drop the lateral plications. The prevailing type for the Hamilton is that called *L. multicosta*, in which the lateral plications are generally faint and fewer, while the central plications are strong and more raised than in the lower forms. In the Genesee, *L. quadricostata* is the common form, with the lateral folds nearly obliterated.

In the early Chemung, *L. mesocostalis*, *globuliformis*, and forms like *L. Kelloggi* prevail, while the small *L. sinuatus* is more common toward the top, all of them, typically, having smooth lateral slopes and a few plications along the center, forming a more or less distinct fold and sinus.

But we notice that a few specimens may be found in Chemung shales, plicated quite to the margin, as in the early type. Thus in interpreting the fauna of 14 N., the presence of the Chemung type of *Leiorrhynchus*, although in the midst of a nearly pure Hamilton fauna, shows that, in time, we have passed the Hamilton stage, though Hamilton species are not yet extinct, and that we have a recurrent fauna, and not the normal Hamilton fauna. Thus the fossils independently confirm the facts which the stratigraphy testifies.

Passing this transition stage in which an occasional fossil appears—a *Palaoneilo*, a *Leiorrhynchus*, or some other species of wide range—the fauna of the Ithaca group gradually makes its appearance. Between 150 and 200 feet above the *Lingula complanata* stage the Ithaca fauna appears in full force, and 50 feet higher has exhibited the full complement of its species.

The first species, which is thoroughly characteristic of the fauna, is

era mesocostalis of the eastern variety. This is the form figured I. N. Y., Vol. IV, Plate 40, Figs. 1, 2, and 3. At the first appearance of this species, it is associated with *Leiorhynchus mesocostalis*, *Pallofilosa*, and *Chonetes* of the *C. scitula* type, and traces of *Microdon* of *Modiomorpha*.

As fauna may be seen at the base of the old inclined plane, my Station No. 27 A and B.

A little higher *Rhynchonella eximia* appears, then *Orthis impressa* and *Strophodonta mucronata*, and these half dozen species, earliest to appear in the region, are characteristic and among the most abundant species of the fauna of this Ithaca group, viz, *Spirifera mesocostalis* (1st var.), *Pallofilosa*, *Orthis impressa*, *Strophodonta mucronata*, *Leiorhynchus mesocostalis*, and *Rhynchonella eximia*.

Leiorhynchus is peculiar in being very abundant where it appears, when it is abundant there are generally very few other species in the same stratum.

Having passed this first stage of the introduction of the fauna, we find a sandstone bed, calcareous in some localities, forming a fire-bed, which is a consolidated mass of broken fossils.

The characteristic species of this layer are *Spirifera mesostrialis* and *Cryptonella eudora*.

In several places about Ithaca this stratum is worked for quarry

The old McCormick quarry of the early reports, the present University quarry, and several others, are at this horizon.

The University quarry, Station No. 5, is characteristic.

FAUNA OF STATIONS No. 5, ETC.

Spirifera mesostrialis.

Cryptonella eudora.

Spirifera mesocostalis 1st var.

Gomphoceras tumidum.

Cyrtina Hamiltonensis.

Orthoceras bebryx var. *Cayuga*.

Poteriocrinus Cornellianus.

Pleurotomaria capillaria.

Productella speciosa.

Euomphalus Hecale?

Grammysia elliptica.

Rhynchonella eximia.

Atrypa reticularis.

Ptilophyton (*Lycopodites*) *Vanuxemi*.

Rhodea (stems).

Fragments of wood.

Stictopora Meeki.

Microdon bellistriata.

gregaria.

Platyceras carinatum.
Modiomorpha concentrica ?
Bellerophon sp.
Strophodonta perplana var. *nervosa.*
Rhynchonella Stephani.
Zaphrentis simplex ?
Stromatopora sp.

To this fauna probably belongs *Streptorhynchus*, a single specimen of which I have seen from "Ithaca," but do not know the precise locality.

Below this zone, perhaps 50 feet, is found in a single locality, Station No. 37, a small but very abundant fauna of *Orinoids*, *Bryozoa*, and *Rhynchonella*.

FAUNA OF STATION No. 37.

Rhynchonella eximia.
Poteriocrinus gregarius.
Stictopora Meeki.
Spirifera mesocostalis.
Cyrtina Hamiltonensis.
Productella, a small species.
Aviculopecten cancellatus.
 Plates of a large *Arthroacantha*.
 Two or three *Bryozoa*, undetermined.
 A small *Lycopodites*.

The first three species constitute the mass of the fauna; the others are rare.

The lithological characters are interesting. In the midst of sandy shales containing the *Brachiopods* is included a stratum of but an inch or so in thickness of fine, soft, mud shale, almost black, and containing the *Crinoids* and the small *Lycopodites*.

The *Crinoids* are minute, but occur in great numbers and exhibit considerable variation. (See Proc. Acad. Nat. Sc. Phil. 1882, p. 22.)

Passing above Station No. 5 the typical Ithaca group fauna prevails for some hundred feet or more, then gradually lessens in the number of its species and individuals, and the last species to appear is the *Spirifera mesocostalis* and *Orthis impressa*.

The fauna is found in several of the ravines about Ithaca; the best exposures are in Fall Creek and the upper part of Cascadilla Creek, and along the cutting on South Hill called the "inclined plane" in the old State reports.

FAUNA OF STATIONS No. 10, 27 C, D, ETC.

The "Ithaca fauna" proper:

Spirifera mesocostalis 1st var.
Strophodonta mucronata.
 perplana var. *nervosa.*
Cyrtina Hamiltonensis.

Productella speciosa.
Atrypa reticularis.
Microdon bellistriatus.
Leiorhynchus mesocostalis.
Orthis impressa.
Chonetes setigera.
Chonetes scitula.
Crania sp.
Productella speciosa, small var.
Lingula spatulata var.
Lunulacardium fragile.
Cytherodon quadrangularis.
Palæoneilo filosa.
Leda n. s.
Pterinopecten suborbicularis.
 sp.
Leptodesma (several species).
Actinopteria *Boydii*.
Modiomorpha complanata.
Grammysia subarcuata.
Nucula sp.
Aulopora sp.
Orthoceras *Bebryx*.
 fulgidum.
Bellerophon leda.
Pleurotomaria capillaria.
Tentaculites spiculus.
Stictopora Meeki.
Callopora, Hall, sp.
Platyceras sp.
Discina neglecta?
Goniatites uniangularis?
Orthoceras pecator.
Arthroacantha Ithacensis.
Productus dissimilis (abundant in a single locality).
Rhynchonella pugnus var. (frequent in localities).
 ? *Strophodonta demissa*.

This Ithaca fauna contains a few other species, but I have given the main list in approximately the order of their abundance. The species in the early part of the list are frequently seen, and some of them are abundant in localities; those recorded lower down in the list are rare, or seen, it may be, abundantly in single strata or localities. A few, not given in the list, are not certainly of this horizon, and are on this account omitted.

It will be noticed that a few of the species of the general Portage fauna are here included, as *Palæoneilo filosa*, *Lunulacardium fragile*, and

a few *Goniatites* and *Orthoceratites*, which occur here in imperfect condition, but *Cardiola speciosa*, a characteristic Portage form, has not been detected in the midst of the Ithaca fauna.

However, a little farther south, at Station No. 68, Newfield, as the Ithaca fauna ceases, the typical Portage fauna reappears.

One hundred to one hundred and fifty feet above the termination of the Ithaca fauna, in dark, fine, argillaceous shales, appear the following species:

Cardiola speciosa.

Lunulacardium fragile.

Lingula complanata.

Bellerophon mæra.

A small *Palæoneilo*.

Rhodea stems.

Strophodonta mucronata.

This is the fauna of No. 68 A and B.

This I take to be the mark of the final withdrawal of the Ithaca fauna from this geographical area, and the return of the general Portage fauna.

What is also remarkable of this fauna in this region is its withdrawal in the reverse order in which it came in.

After the Brachiopod fauna is pretty well gone, there appears a soft, almost black, argillaceous shale bearing *Discinas*, and above this, and almost alone, occurs *Spirifera lævis*, which, it will be remembered, appeared in abundance entirely below the Ithaca fauna, and was in the zone preceding that in which the *Lingula complanata* fauna occurred.

This Ithaca fauna does not appear far west of Ithaca, but a few of its species—the Cladochonus subfauna almost entire—appear 20 miles west in ravines running into Seneca Lake.

It will be noticed that *Strophodonta mucronata* also appeared in Station No. 48, the earliest forerunner of the Ithaca fauna.

The study of the order of the faunas alone in this meridian furnishes strong evidence for the opinion that what I have called the Ithaca fauna, which was characteristic of the "Ithaca group" of the early State geologists, is geographically a temporary fauna, preceded and followed by the conditions and fauna generally regarded as belonging to the Portage group. This subject will be further discussed when the sections in other parts of the State shall be brought under consideration.

In this meridian several hundred feet of deposits follow, in which almost no fossils occur. Its general character is that of coarse arenaceous shales with thin seams of sandstone, tending, in the upper part, to flaggy and uneven, wave-marked strata. Interstratified with these are thin streaks of greenish argillaceous shales, in which are seen, rarely, the species of the Portage fauna.

This condition of things prevails, at this meridional section, until

about 1,300 feet above the top of the Genesee shale, where the first of the typical Chemung faunas appear.

The first species of this fauna, that I have detected, are on the high hill south of Ithaca, in Danby (Station No. 58), about 1,500 feet above the sea, and estimated to be stratigraphically 1,300 feet or more above the Genesee shale.

A lithological difference is clearly seen in the change from dark, tough, wave-marked, arenaceous shales with interstratified greenish argillaceous shales, to soft, coarse-bedded, blocky shales, weathering brown and rapidly disintegrating into rich yellow soil. The first species met with were from Station No. 58:

Productella lachrymosa.

Ambocælia umbonata var. *gregaria.*

Orthis impressa (second variety, wide and large).

Atrypa reticularis.

And a few other imperfect fossils.

Both east and west of this locality, in Caroline and in Newfield, are hills rising to 1,800 or 1,900 feet, and the upper part of these hills, though mainly covered by a deep coating of soil, exhibit outcrops and loose slabs and blocks, still angular (thus evidently not transported), in which the Chemung fauna appears.

Still farther south the same rocks and fauna are found, in place, at a lower level.

Numerous sections have been made along this meridian, containing the Chemung fauna. It is an abundant fauna, and it appears to have been subdivided into a few local subfaunas. Still it is difficult to speak positively here, on account of the rapid change in the detailed stratigraphical conditions. Sometimes it is difficult to trace some particular fossiliferous stratum even across a wide gorge of a few hundred feet. However, I have been able to determine the order of the subfaunas of the Chemung group as follows:

As before mentioned, traces of the fauna occur before it appears in full force, and as in the case of the Ithaca fauna, the forerunners of the Chemung fauna are characteristic species and also species of wide geological range. There are such species as *Productella lachrymosa*, *Ambocælia umbonata* var. *gregaria*, and the wide form of *Orthis impressa*.¹

After these species had appeared, and far above the last traces of the Ithaca fauna, a stage of fine, fissile, argillaceous shales, in some exposures nearly black in color, appeared at the base of the series of strata bearing the main Chemung fauna. This dark shale is well represented at Van Ettenville, my Station No. 62 A. It appears also at the bottom of the cliff at lower Chemung Narrows, Station No. 67 A. In the midst of the

¹ In giving the names of species in this paper I have intentionally chosen those names by which the forms are more commonly designated in collections of New York fossils; points of nomenclature and comparison of local varieties with each other, and their identification with species of wider or distant geographical areas, may appropriately be left for special consideration.

shale are generally found flattened concretions of brown hematite, often inclosing a few species which are more abundant in the beds higher up. This is, so far as I know, the lowest Devonian horizon for definite agglomerations of the hematite ore.

The shales themselves carry a *Lingula* fauna, very similar to that in the dark shale at the base of the Ithaca group, but mingled with other species. These latter species appear to belong normally to the fauna of the common Chemung shales with which the *Lingula*-bearing shales are interstratified.

The following species occur in the fauna of Station No. 62 A and B:

Lingula complanata.

punctata.

Spirifera mesocostalis (2d var.).

mesostrialis (2d var.).

Ambocelia umbonata var. *gregaria.*

Cyrtina Hamiltonensis.

Orthis impressa (2d var.).

Atrypa reticularis.

Leptodesma sp.

Chonetes scitula.

Crinoid stems (? = *Tarocrinus*).

A variety of *Lingula spatulata* occurs in similar shales of Station No. 67.

The following species appear in a similar shale at about the same horizon, and I believe them to belong to the same subfauna:

Productella speciosa (small var.)

Rhodea stems.

Palæoneilo filosa.

Schizodus sp.

Euomphalus Hecale?

This subfauna and the containing shales gradually pass up into coarser, brown, arenaceous shales and the normal Chemung fauna.

The most northern exposure, at which the typical Chemung fauna was found in abundance, was high up in the hills in the northeastern part of Chemung County, near Park Station of the Utica, Ithaca and Elmira Railroad, between 1,400 and 1,500 feet above the sea. It is my Station No. 72, with the following fauna:

Orthis Tioga.

carinata.

Strophodonta caryata.

Productella lachrymosa.

Spirifera disjuncta.

Atrypa reticularis, vars. *spinosa* and *hystrix.*

Spirifera mesostrialis (2d var.).

Ambocelia umbonata var. *gregaria.*

Spirifera mesocostalis (2d var.).

Streptorhynchus Chemungensis.

Pterinea Chemungensis (Con.).

The above are the more common species at this locality, and in every locality in this region where the Chemung fauna appears in full force. With the above are associated a long list of other species, met with more rarely in any particular locality and less universally, but in several cases locally abundant.

The cliffs along the narrows, above and below Chemung village, contain the typical Chemung fauna.

I have added some species to those already quoted from this locality by the State geologists and others.

TYPICAL CHEMUNG FAUNA (STATIONS NOS. 65, 66, AND 67).

Orthis Tioga.

Streptorhynchus Chemungensis.

Aviculopecten pecteniformis Hall.

(= *Pterinea Chemungensis* (Con.)) H. S. W.

Strophodonta Cayuta.

demissa.

Productella lachrymosa var. *lima*.

costatula.

Spirifera disjuncta.

Ambocœlia umbonata var. *gregaria*.

Atrypa reticularis.

Rhynchonella contracta.

Leiorhynchus sinuatus.

mesocostalis.

Cryptonella eudora.

Pteronites spinigerus Con.

Pterinea protecta Con.

Avicula multilineata Con.

Cypricardites (Goniophora) Chemungensis.

Schizodus (Nuculites) Chemungensis (Con.).

Grammysia subarcuata H. & Whit.

The rarer associates of this fauna are:

Chonetes setigera.

Illinoisensis ?

Pleurotomaria capillaria.

Euomphalus sp.

Callonema sp.

Rhynchonella sappho.

Orthis michelini L'Ev. (if distinct from *O. Vanuxemi*).

Glyptodesma sp.

Bellerophon mæra.

Platyceras sp.
Cyclonema sp.
Orthis leoneensis.
Knorrja, a fragment.
Cladochonus sp.
Orthis carinata (abundant).
Strophodonta perplana var. *nervosa*.
Tarocrinus Ithacensis.
Gomphoceras, a fragment.
 "Fucoides *graphica*."
Spirifera fimbriata (a single specimen in Station No. 60).
Spirifera mesocostalis (2d var.).
Atrypa aspera.
Orthis impressa (wide var.).
Rhynchonella orbicularis.
Discina grandis.
Mytilarca Chemungensis.

A little farther east the following species occur in the same general association:

Tropidoleptus carinatus.
Microdon bellistriatus.
 Crinoid stems.
Spirifera mesostriata (3d var.).
Phacops rana.
Dalmanites calliteles ? (a trace).
Cyrtina Hamiltonensis.
Palæoneilo bisulcata.
Loronema styliola.
Productella speciosa.

Two zones in the formation, in the midst of the general fauna and a calcareo-arenaceous rock (Nos. 67 E and H), carry the following additional species:

Zaphrentis, sp.
Heliophyllum, near *H. Halli*.
Stomatopora, sp.
Stictopora, sp.
Tentaculites spiculus ?
 Crinoid stems and some other *Bryozoa* not described.

These corals, occurring as they do mainly in the condition of casts, are of little satisfaction except as marking the presence of the genera.

Prof. James Hall early recognized the "Cyathophylloid" corals in the Chemung fauna, but, so far as I know, the species are not described, nor are any species recorded from the Chemung group of New York. (Geology N. Y., Part 4, p. 255.)

A study of this typical Chemung fauna, as exhibited a few miles

each side the Chemung-Tioga County line, reveals the following general laws as to its conditions, characteristic species, and relations to other faunas.

The fauna prevails through about 250 feet of strata. The general character of these rocks is a series of alternating shales and sands, the argillaceous ingredients generally prevailing over the arenaceous, strongly ferrous, expressed rarely in the presence of ironstone concretionary nodules, but commonly recognized only by the universal iron-stain these rocks show upon weathering, and the rich, brownish-yellow color of the soil produced by their disintegration.

Near the beginning of the fauna, the shales tend to assume a fissile character, associated with the presence of the *Lingula* subfauna before mentioned.

As the fauna has reached its maximum development, a calcareo-arenaceous deposit appears carrying a rich coral and bryozoal subfauna, which reappears again toward the close of its prevalence in this area, each time marked by the continuance, for longer than usual, of undisturbed conditions favorable to the deposit of thick, solid sandstone strata. These sandstones must have been relatively local, as they vary both in thickness and in the character of the deposit, when followed along for even a few hundred feet of continuous exposure.

The Chemung fauna is recognized for a thickness of full 300 feet of strata, and the coral sandstone occurs three times in the series at Lower Chemung Narrows, and was recognized twice at the Upper Narrows. Since this sandstone is calcareous, and is marked by the presence of Cyathophylloid corals and Bryozoa, associated with the Chemung Brachiopod fauna, it becomes an important stratum in the comparison of separate sections.

In the several localities measured, the first and third coral sandstones are separated by about 250 feet of strata.

The second sandstone is in Station No. 67, about 15 feet above the first.

These sands vary considerably in thickness, and when a cliff of a few hundred yards is exposed, the corals may be abundant at one end of the cliff and no trace of them at the other, the sandstone seam itself also breaking up into alternating thin layers of shale and sandstone, and losing in great measure the calcareous character. For these reasons I have given average measurements.

There appear to have been two stages in the series in which this coral subfauna was locally abundant, and they were probably confined to limited areas in the form of shallow basins. They were separated by an average of 225 feet of shales, the majority of which was comparatively barren, but with the second incoming of the coral sandstone the principal Chemung Brachiopods returned, though not so abundantly as at first.

In some localities these sandstones are thick-bedded and form consid-

erable quarries of fair building stone. As far as determined, the highest sandstone was the more fully developed and contains the thicker bedded sandstone. Though it is possible that in some area the first two sands may have been continuous, forming 15 or 20 feet of sandstone.

Above the horizon of this upper sandstone no good exposures of the strata were found on this meridian until passing the State line and reaching Ulster, Bradford County, Pennsylvania.

In the cuttings made through the rocks by Cash Creek, exposures of Upper Chemung strata were examined. Here at my Station No. 81 a sparse fauna was obtained in a thin, semicalcareous, coarse sandstone containing considerable amount of large fragments of fossil wood and fish bones, with occasionally small pebbles. In Bradford County, Pennsylvania, the folds of the rock masses have become quite marked, as was reported by Mr. Sherwood in the Pennsylvania report, second survey, Report G.

The exposure at Cash Creek is at about the same altitude as that at Chemung Narrows, but is situated near the axis of the Blossburg Mountain Synclinal of Sherwood's Report G, p. 44.

The relation of the strata to those exposed at Chemung Narrows is a matter of calculation, and though they are certainly higher, stratigraphically, than the latter I feel no confidence in exact figures given to express the relative position.

Examination of the series farther west in the same county leads me to believe that the Ulster beds are situated within 300 feet above the upper coral sandstone of Chemung County, New York, and that there is no abundant Chemung fauna between. Further investigations may disprove this opinion, but I think it is very doubtful if the few traces of Chemung species found further south are any higher in the series than these Ulster beds.

The fauna of Station No. 81 C is as follows :

Spirifera mesocostalis.

Ambocalia umbonata var. *gregaria*.

Strophodonta Cayuta.

perplana? var. *nerrosa*?

Streptorhynchus Chemungensis.

Chonetes sp.

Spirifera, like sp. *Carteri*, but having some features similar to *Syringothyris*, and too imperfect to determine with certainty.

Crinoid stem, $\frac{1}{4}$ inch in diameter, and resembling those of Sub-Carboniferous species.

A small *Rhynchonella*.

Fragments of fish-bones.

Fragments of wood.

A few small pebbles were also seen.

This is plainly an Upper Chemung fauna. It exhibits also traces of

nearness to the conglomerate and the conditions characterizing the Catskill group.

In regard to the position in the series to which the fossiliferous beds in Franklin Township should be referred, I am in doubt. (See 2d Geol. Surv. Penn., G, p. 37.) The relation which the beds may bear to the red "Catskill" rocks above does not help the matter, since it is pretty well proven that these red rocks began to intrude themselves into the marine deposits at quite different stages in the series of different localities.

Up to the decline of the typical Chemung fauna my investigations along this meridian gave me reasonable satisfaction; but with the approach and intrusion of the coarse reds and grays the faunas were much confused and broken up. It is probable that except for local areas the majority of the fauna was destroyed.

In order to a clear understanding of the final history of these marine Devonian faunas, it will be necessary to study them in some area where these red beds (which, like the old reds of Great Britain, were probably deposited in fresh or brackish water) do not interrupt the continuity.

The elevation of land, which was evidently taking place over this area at this time, produced in some cases shore conditions where conglomerates were deposited, and in others great land-locked basins, from which, with the total or partial exclusion of salt water, the marine fauna rapidly perished.

Wherever the shores, produced by the elevation, were mere extensions of mainland with rocky exposure, we may suppose that beds of conglomerate might result; but where the land was produced by bringing the bottoms at a distance from land up to the surface, we may suppose that the nature of the deposits would not be greatly changed, except in so far as the shutting off the direct action of the sea would affect them chemically.

So long as the Chemung fauna found congenial conditions of life outside, it is reasonable to infer that its species might occasionally be intruded into these basins and thus appear interstratified with red rocks. That there was such lifting of the marine bottom to the surface, in regions where the red rocks precede conglomerate or coal, is shown by the irregular bedding and channeling of the beds, with very little change in textural qualities of the deposits which preceded the red "Catskill" deposits. Where the Chemung conditions follow up to the conglomerates, as in Western New York, this irregular bedding does not occur till the shore conditions of the conglomerate were actually present.

The present section alone does not give us the data for determining the order of the faunas in this upper part of the Devonian series.

I hope at some future time to be able to clear up this point by applying to it the results of study upon other sections.

After leaving the last fauna at Ulster, I estimate that there are ap-

proximately 1,000 feet of coarse reds and grays and conglomerates before reaching the Barclay coal, which lies some 2,000 feet above the sea. (2038. 2d Geol. Surv. Penn., G., p. 13.)

The "Ithaca group" was regarded by Mr. Vanuxem, the geologist of the third district, in 1842, as one of the primary subdivisions of the Erie division. (See Geol. N. Y., 3d Dist., p. 174.)

In 1841 Professor Hall expressed the opinion that the separation of this from the typical Chemung group was not supported by comparison of the fossils; and in 1843, in the report of the fourth district, he discarded the Ithaca group, regarding it as identical with the Chemung group, as represented along the Chemung River. (See Geol. N. Y., 4th Dist., p. 250.) The reason given was "the impossibility of identifying them as distinct by any characteristic fossils." This opinion has prevailed ever since.

Although the faunas are very similar, there can be no doubt that along the present meridian they represent two distinct geological stages. That they blended in some measure further east may be possible, in the same way that it is probable that on going westward the Marcellus and Genesee stages blended.

Although I do not doubt that the Ithaca fauna is an early stage of the Chemung fauna, I am persuaded that the two may be readily distinguished by their fossils.

That the typical Chemung fauna is thus distinct from that of the Ithaca group and characteristic of a later stage, is shown, palæontologically, by the following considerations:

The genera *Spirifera*, *Orthis*, *Strophodonta*, and *Productella* are common to both faunas, and are represented by numerous individuals at almost any fossiliferous exposures of either group. But for each genus the species are different. *Spirifera* is represented in the Ithaca group by *Sp. mesocostalis* var. *acuminata* and the first variety of *Sp. mesostrialis*.

The Chemung group is characterized by *Sp. disjuncta*, *Sp. mesocostalis* 2d var., a large, coarsely plicated, broad form, and *Sp. mesostrialis* 2d var., the wide mucronate form, neither of which is seen in the Ithaca group.

Orthis, in the Ithaca group, is *O. impressa* of the narrow variety, rarely wider than long.

In the Chemung group *O. impressa* is the 2d var.; wide form, with broad sinus; also there are *O. tioga* and *O. carinata*, neither of which is known in the Ithaca group.

The *Strophodontas* of the Ithaca group are *Str. mucronata*, and the closely allied variety of *Str. perplana* var. *nervosa*.

In the Chemung group *Str. cayuta* is the prevailing form, and a coarser, more irregular form of *Str. perplana* var. *nervosa*.

Str. demissa is reported from both groups, but is extremely rare in either.

Productella is represented in the Ithaca group by *P. speciosa*, and a

small form I have identified as *P. speciosa*, small variety. In the Chemung it is *P. lachrymosa* and *P. costatula*.

Besides these genera, *Streptorhynchus* is common in the Chemung group, and it is extremely rare, if it appear at all, in the Ithaca group.

Ambocoëlia umbonata var. *gregaria* is abundant in some stages of the Chemung group, but is rarely ever seen at Ithaca. The latter two forms are seen below the Ithaca group, hence their absence there is evidence of modified fauna, rather than extinction.

These differences in the prevailing varietal, or specific characters of common genera, which (as genera) are known to be common for a considerable range below and above the stages under consideration, I take to be more reliable evidence of actual difference in horizon than would be any number of distinct species of different genera in the two faunas.

SUMMARY.

The following is a summary of the order and general relative position of the faunas from the Genesee slate to the Barclay coal, which my present knowledge leads me to believe is true for the meridian passing through Ithaca, N. Y., running southward.

1st. Genesee slate fauna.

2d. Portage group fauna, distributed through approximately 1,300 feet of strata, but interrupted by the intrusion of the Ithaca fauna and several sub-faunas.

3d. Chemung fauna, occupying at least 1,200 feet of strata, with perhaps two sub-faunas, and driven out or destroyed by the presence of the conditions marked by the deposit of red and gray Catskill rocks.

Within the limits, assigned to the Portage group in the western part of New York State, I believe should be included for this meridian all those deposits lying between the Genesee shale and the lowest yellow-brown shale and sandstones which carry the true Chemung group fauna.

This series, as a whole, may be described as arenaceous, dark-colored shales with the *Cardiola speciosa* fauna, toward the top running into wave-marked, tough, arenaceous deposits, almost totally barren, so far as known.

The passage, between this series and the true Chemung, is stratigraphically indistinct, but in a general way it may be recognized by the clearer separation of the argillaceous from the arenaceous deposits after passing the line, and the appearance of lighter-colored sandstones in the midst of softer argillaceous shales, in which iron nodules and iron stains become more conspicuous than below.

The shales of the Portage below are thinner and of more greenish tint, and its sandstones are darker in color and thin, tough, and wave-marked or flaggy. Palæontologically, however, the transition is more marked.

The upper part of the Portage appears to be utterly barren except

in an occasional thin stratum of green shale, a *Cardiola speciosa*, or a small *Palæoneilo*, or *Leda* may appear.

As soon, however, as we reach the true Chemung rocks we meet large *Productella lachrymosa*, *Ambocælias*, and *Spirifers* of the Chemung types. Within the limits of the Portage group, as so defined, we find in this area several secondary faunas intruding, but with limited geographical distribution, some of which we are able to trace toward, if not to, their origin.

The first of these is the *Cladochonus* fauna of Station No. 48, an outlier and forerunner of the Ithaca fauna, and entering this area from the east and traced as far west as Seneca Lake.

The second is the *Spirifera laevis* fauna, also coming in from the east, and not known west of Cayuga Lake Valley.

The third is the *Lingula* fauna of the Ithaca shale, which I think may be connected with the general black shale fauna, and if so, it was intruded from the west.

Fourth, is the thin recurrent Hamilton fauna, which may have been some little colony that had escaped destruction, or remained after the general retreat of the Hamilton fauna.

It is not improbable that evidence will be found proving conclusively that, after the general prevalence of the Portage group and its fauna, the Hamilton conditions and more or less of its fauna may have continued to live in some region east and north of this area.

Fifth, was the general Ithaca fauna, with a single coral, sub-fauna, in its midst found in the one heavy bedded sandstone of that group. This sandstone is semi-calcareous where the coral occurs, and in places it is a mass of comminuted, broken shells. In this sub-fauna, also occurs the Terebratuloid fossil *Cryptonella Eudora*.

The Ithaca fauna was substantially a Brachiopod fauna, with the characteristic forms *Spirifera mesocostalis*, *Orthis impressa*, *Strophodonta mucronata*, and *Cyrtina Hamiltonensis*, and others.

This fauna is the regular successor of the Hamilton fauna, and is intermediate between it and that of the Chemung group. It appears to have come in from the east. It prevailed during the deposition of two to three hundred feet of arenaceous shales; the coral sandstone fauna came in before its maximum development. At the close of its occupation of this area a dark, fissile shale with a *Discina* fauna came in. This I believe to be another outlier of the Genesee shale conditions, whose center at this time must have been toward the western part of the State.

A few feet above this dark shale the representatives of the *Spirifera laevis* fauna reappeared, among them a well-developed specimen of *Spirifera laevis*. Above this point the rocks are relatively barren except for the occasional presence of a small specimen of *Productella* or *Spirifera*, or traces of the Portage fauna, until the incoming of the Chemung fauna, three or four hundred feet higher up.

The Chemung fauna came in gradually, and before it was thoroughly

introduced, there appeared a dark, fissile shale very similar to that underlying the Ithaca fauna. This dark shale carried a *Lingula* fauna, the principal species of which were the same as those in the Ithaca dark shale, but the associated forms are of the upper Chemung types, showing it to be a recurrence at a later stage, and not identical with the Ithaca-*Lingula* fauna, as the stratigraphical evidence also clearly indicates.

Not long after the Chemung fauna had fully occupied the area, a massive, often calcareous sandstone was deposited, containing an interesting coral sub-fauna. Again, some 250 feet higher up in the series, and near the close of the dominance of the Chemung species, the coral subfauna reappears under like conditions.

Above this zone Chemung species are rare, but are the only marine forms to appear at all till after the deposit of the red sands and conglomerates.

Toward the close of the Chemung period there were disturbances over this area which made it impossible, with the present knowledge of the series, to define the passage of the Chemung fauna into anything higher up.

Even after traces of the red "Catskill" rocks were deposited, some of the Chemung species remained. The reds, purples, and grays, and the white conglomerates, although some thousand feet in thickness, and carrying some fish bones and scales, and fragments of plants, show very little, if any, trace of marine life.

This series is terminated by the marshy land depositions of the Barclay coal mine.

I am under obligations to the Director of the United States Geological Survey for the insertion of this report in this place. The material was collected, and the work done on it privately in connection with my duties in Cornell University. The nature of the investigations having come to the notice of the Director, I was placed in position to continue them under the auspices of the Survey. This article is therefore included here as the first of a series of articles upon the comparative palæontology of the Devonian and Carboniferous faunas.

Although I am responsible for the opinions here advanced, I owe much to the suggestions and inspiration received from others. Especially valuable have been the numerous papers in which have been discussed the problems connected with the Devonian and Old Red Sandstone deposits of Great Britain and Europe. I may mention especially those of Messrs. Etheridge, Edward Hull, and T. M. Hall; also the papers of M. Jules Gosselet upon similar series in North France, and the interesting works of Joachim Barrande in other fields.

The writings of Professor Hall have been of great value, and the suggestions appearing all along in his works have often been in mind during these investigations.

ITHACA, N. Y., *December*, 1883.

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ADVERTISEMENT.

The publications of the United States Geological Survey are issued in accordance with the statute approved March 3, 1879, which declares that—

"The publications of the Geological Survey shall consist of the annual report of operations, geological and economic maps illustrating the resources and classifications of the lands, and reports upon general and economic geology and paleontology. The annual report of operations of the Geological Survey shall accompany the annual report of the Secretary of the Interior. All special memoirs and reports of said Survey shall be issued in uniform quarto series if deemed necessary by the Director, but otherwise in ordinary octavos. Three thousand copies of each shall be published for scientific exchanges and for sale at the price of publication; and all literary and cartographic materials received in exchange shall be the property of the United States and form a part of the library of the organization. And the money resulting from the sale of such publications shall be covered into the Treasury of the United States."

ANNUAL REPORTS.

From the above it will be seen that only the Annual Reports, which form parts of the reports of the Secretary of the Interior and are printed as executive documents, are available for gratuitous distribution. A number of these are furnished the Survey for its exchange list, but the bulk of them are supplied directly, through the document rooms of Congress, to members of the Senate and House. Except, therefore, in those cases in which an extra number is supplied to this office by special resolution, application must be made to members of Congress for the Annual Reports, as for all other executive documents.

Of these Annals there have been already published:

- I. First Annual Report to the Hon. Carl Schurz, by Clarence King. Washington, 1880. 8°. 79 pp. 1 map.—A preliminary report describing plan of organization and publications.
- II. Report of the Director of the United States Geological Survey for 1880-'81, by J. W. Powell. Washington, 1882. 8°. 1v, 568 pp. 61 pl. 1 map.
- III. Third Annual Report of the United States Geological Survey, 1881-'82, by J. W. Powell. Washington, 1883. 8°. xviii, 564 pp. 67 pl. and maps.
- IV. Fourth Annual Report of the United States Geological Survey, 1882-'83, by J. W. Powell. Washington, 1884. 8°. xii, 473 pp. 85 pl. and maps.

MONOGRAPHS.

The Monographs of the Survey are printed for the Survey alone, and can be distributed by it only through a fair exchange for books needed in its library, or through the sale of those copies over and above the number needed for such exchange. They are not for gratuitous distribution.

So far as already determined upon, the list of these Monographs is as follows:

- I. The Precious Metals, by Clarence King. In preparation.
- II. Tertiary History of the Grand Cañon District, with atlas, by Capt. C. E. Dutton. Published.
- III. Geology of the Comstock Lode and Washoe District, with atlas, by George F. Becker. Published.
- IV. Comstock Mining and Miners, by Eliot Lord. In press.
- V. Copper-bearing Rocks of Lake Superior, by Prof. R. D. Irving. In press.
- VI. Older Mesozoic Flora of Virginia, by Prof. Wm. M. Fontaine. In press.
- VII. Silver-lead Deposits of Eureka, Nevada, by Joseph S. Curtis. In press.
- VIII. Paleontology of the Eureka District, Nevada, by Charles D. Walcott. In press.
- Geology and Mining Industry of Leadville, with atlas, by S. F. Emmons. In preparation.
- Geology of the Eureka Mining District, Nevada, with atlas, by Arnold Hague. In preparation.
- Coal of the United States, by Prof. R. Pumpelly. In preparation.
- Iron in the United States, by Prof. R. Pumpelly. In preparation.
- Lesser Metals and General Mining Resources, by Prof. R. Pumpelly. In preparation.
- Lake Bonneville, by G. K. Gilbert. In preparation.
- Dinocerata. A monograph on an extinct order of Ungulates, by Prof. O. C. Marsh. In press.

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Sauropoda, by Prof. O. C. Marsh. In preparation.

Stegosauria, by Prof. O. C. Marsh. In preparation.

Of these monographs, Nos. II and III are published, viz:

II. Tertiary History of the Grand Cañon District, with atlas, by C. E. Dutton, Capt. U. S. A. 1882. 4°. 264 pp. 42 pl. and atlas of 26 double sheets folio. Price \$10.12.

III. Geology of the Comstock Lode and Washoe District, with atlas, by G. F. Becker. 1883. 4°. XV, 422 pp. 7 pl. and atlas of 21 sheets folio. Price \$11.

Nos. IV, V, VI, VII, and VIII are in press and will appear in quick succession. The others, to which numbers are not assigned, are in preparation.

BULLETINS.

The Bulletins of the survey will contain such papers relating to the general purpose of its work as do not properly come under the heads of ANNUAL REPORTS or MONOGRAPHS.

Each of these Bulletins will contain but one paper, and be complete in itself. They will, however, be numbered in a continuous series, and will in time be united into volumes of convenient size. To facilitate this each Bulletin will have two paginations, one proper to itself, and another which belongs to it as part of the volume.

Of this series of Bulletins there have already been published:

1. On Hypersthene-Andesite and on Triclinic Pyroxene in Augitic Rocks, by Whitman Cross, with a Geological Sketch of Buffalo Peaks, Colorado, by S. F. Emmons. Washington, 1883. 8°. 42 pp. 2 pl. Price 10 cents.

2. Gold and Silver Conversion Tables, by A. Williams, Jr. Washington, 1883. 8°. 8 pp. Price 5 cents.

3. On the Fossil Faunas of the Upper Devonian along the meridian of 76° 30', from Tompkins County, N. Y., to Bradford County, Pa., by Henry S. Williams. 1884. 8°. 36 pp. Price 5 cents.

4. On Mesozoic Fossils, by Charles A. White. 1884. 8°. 26 pp. 9 pl. Price \$5 cents.

STATISTICAL PAPERS. •

A fourth series of publications having special reference to the mineral resources of the United States is contemplated. Of that series the first has been published, viz: Mineral Resources of the United States, by Albert Williams, Jr. 1883. 8°. 8viii, 813 pp. Price 50 cents.

Correspondence relating to the publications of the Survey, and all remittances, which must be by postal note or money-order, should be addressed to the

DIRECTOR OF THE UNITED STATES GEOLOGICAL SURVEY,

Washington, D. C.

WASHINGTON, D. C., May 1, 1884.

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UNITED STATES GEOLOGICAL SURVEY

J. W. POWELL DIRECTOR

ON

MESOZOIC FOSSILS

BY

CHARLES A. WHITE, M. D.



WASHINGTON
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ON MESOZOIC FOSSILS.

BY CHARLES A. WHITE.

DESCRIPTION OF CERTAIN ABERRANT FORMS OF THE CHAMIDÆ FROM THE CRETACEOUS ROCKS OF TEXAS.

Although the Cretaceous strata of Texas have long been known to possess great and peculiar interest, comparatively little systematic study has yet been given to their paleontology; and their place in the Cretaceous series, especially that of the lower portion of the formation there, is not yet satisfactorily known. Indeed, the relation of the Cretaceous rocks of Texas to those of the other portions of the continent farther to the northward is yet doubtful; and as it is expected that parties of the United States Geological Survey will soon take up the systematic study of the geology of Texas, I shall not now attempt any general discussion of the subject. However, as this article is devoted to the description of certain forms, the like of which in North America have been found only in the Cretaceous rocks of Texas, it is proper that I should mention certain conspicuous differences between the fauna of the Texan Cretaceous and the faunas of the rocks of that period in all other parts of the continent, so far as they are yet known.

These faunal differences are so great that they are suggestive of a difference in the age of the strata containing the respective faunas; but still I suspect that they are due largely to climatic or other causes which have controlled the development and geographical distribution of species. The extent of these faunal differences can of course be fully shown only by a complete series of illustrations, such as can be prepared only after many years of paleontological labor. Therefore only the more striking examples will be mentioned. The Actinozoa are represented by a considerable number of species and genera in the Texan Cretaceous, while only a few traces of the whole class have yet been discovered in all the strata of that period to the northward. Several families of Echinoids are well represented in the Texan strata, while only two or three specimens, of one species, are yet known to exist in all the region to the northward. The Rudistæ are yet known only in the southern Cretaceous strata, where they are not uncommon. The same is true of the aberrant forms of the Chamidæ, such as are described in this article; for I do not regard the shell described by Conrad from the Upper Missouri River region under the name of * *Requienia senseni*, as belonging

* See Jour. Acad. Nat. Sci., Philad., Vol. II, p. 299.

to either that or any related genus. Certain genera also are represented in the southern, and not in the northern districts. Thus *Erogyra* and *Gryphaea* are abundantly represented in Texan and other southern Cretaceous strata, but they have not been found in rocks of that age north of about latitude 35°, in the interior part of the continent.

The fossils described in this article were collected by Mr. George Stolley from the vicinity of Austin, Tex., and sent by him to the Smithsonian Institution; and permission to use the same has been given by the Director of the United States National Museum. The three new forms herein described were found associated together; but the *Caprotina* (= *Requienia*) *texana* of Roemer was not found associated with them in the same layers. The collection containing the new forms is a very interesting one, but it is made up largely of those three species. A few examples of *Lucina*, *Cerithium*, and other mollusks were found associated with them, and also a species of *Cladophyllia*. The condition of preservation of these fossils is peculiar, nearly all of them being pseudomorphs in almost pure calcite. This condition, while it has preserved the form of the shells quite completely, has entirely obliterated the minute structure of the test which, in the species here described, it would be desirable to know.

Some diversity of opinion has prevailed among paleontologists as to the true zoological position of the forms which are described on the following pages, and other forms closely related to them; but it is now generally agreed that they have close affinities with the Chamidæ, to which family they are here referred. I think, however, that while they all ought to be placed near *Chama*, the forms which are usually ranged under the generic names *Diceras*, *Requienia*, *Monopleura*, *Caprotina*, &c., ought to be separated from the typical chamidæ as one or more groups or subfamilies.

Genus REQUIENIA Matheron.

REQUIENIA PATAGIATA (sp. nov.).

Plate I, Figs. 1-8; and Plate II, Figs. 1-4.

Shell, irregular in shape; test, moderately thick; left valve, much larger than the right, spiral, the spire being more or less distorted and much elevated, consisting of two or three volutions; the scar of attachment at the apex always present, but sometimes very small; the upper side of the spire flattened, broad; the under side regularly convex, meeting the flattened upper side at a distinct peripheral angle, which angle usually bears a prominent, thin, more or less wrinkled carina or fringe. Right valve more regular in shape than the left; the under side convex and the upper flattened, the two sides meeting at an angle similar to that of the left valve, but it is not quite so acute, and it is not fringed; the spire sometimes nearly flat, but usually more or less elevated, making about two volutions; ligamental groove narrow, and

having, especially upon the larger valve, somewhat the appearance of a spiral suture. Hinge strong, the principal tooth of the right valve being large and prominent. Surface marked by irregular lines and wrinkles of growth.

It is difficult to state the dimensions of a shell so irregular in shape as those of this species are; but the extreme measurement of an adult shell may be given as about 55 millimeters.

The irregular shape of the shell seems to be in a good degree the result of a natural habit of the mollusk, but it was in many cases evidently the result, in part, of the contact which it had with other substances. The beak of the left valve is usually distorted by reason of its early attachment to a foreign body; and shells of its own or other species were frequently attached to its surface, adding still further to its disfigurement. (Museum number, 12363.)

REQUIENIA TEXANA Roemer.

(Plate II, Figs. 5, 6, and 7.)

Caprotina texana Roemer, 1852; Kreidebildungen von Texas, page 80, Plate V, Figs. 2a, 2b, and 2c.

Shell very inequivalved, thin, smooth, subtriangular; the larger valve coiled to the right, the terminal volution forming a low, small coil; the upper side flattened, and marked by obsolete spiral lines which are crossed by slightly undulating lines of growth; outer side regularly convex, and marked by oblique lines of growth. The smaller valve suborbicular, carinated, concave; the umbo forming a small spiral of about one volution.

The foregoing description is a free translation of Professor Roemer's original description, and the three figures on Plate II are copies of his illustrations. The collection which Mr. Stolley sent to the Smithsonian from the region round about Austin, Tex., contained numerous examples of this species, but they have all suffered injury by pressure of the somewhat fragile shell. These specimens show that the species reached a considerably larger size than that which is indicated by Professor Roemer's figures; and also that the larger valve was usually, if not always, more or less distorted when fully grown. This species differs from *R. patagiata* in reaching usually a larger size, in having a less angular aspect, its test proportionally thinner, the spire of both valves less prominent, and in the peripheral angle being without a prominent fringe.

Other species which are probably referable to the section of the Chamidæ to which the shells herein described belong, are published by Roemer in his Kreidebildungen von Texas; but our collections do not at present contain any representatives of them. (Museum number, 12366.)

Genus **MONOPLEURA** Matheron.**MONOPLEURA MARCIDA** (sp. nov.).

[Plate III and Plate IV.];

Shell irregular; right valve deeply elongate, sometimes slender, more or less distorted, and usually a little twisted; rudely subelliptical in transverse section; the somewhat flattened anterior side and gently convex posterior side connected by a more abrupt rounding above and below. Scar of attachment sometimes large, occasionally extending along a large part of one side of the valve, but sometimes it is very small; ligamental groove extending from the apex to the hinge margin, distinct, linear, its presence made more conspicuous by the greater elevation of its posterior than of its anterior border. Left valve flat or gently convex; more or less straightened on the anterior side, and otherwise conforming to the margin of the right valve. Surface of the left valve marked by concentric lines of growth, and by numerous radiating irregular raised lines; that of the right valve marked by more or less strong lamellations and lines of growth, and by occasional longitudinal lines, similar to those which mark the other valve. Hinge moderately strong; the two teeth and hinge plate of the left valve strong and prominent, and the tooth of the right valve correspondingly prominent. The individuals sometimes grew separately, but often in clusters, attached to some foreign body or to each other.

The largest right valve in the collection has an extreme length of 50 millimeters, and its greatest diameter at the margin 22 millimeters. (Museum number, 12364.)

MONOPLEURA PINGUISCULA (sp. nov.).

(Plate V.)

Shell very irregular; right valve deep, capacious, often distorted, and sometimes more or less twisted; transverse section of the valve rudely subelliptical; scar of attachment sometimes large, but often small; ligamental groove linear, extending from the apex to the hinge margin, sometimes distinct and sometimes obscure, sometimes nearly straight, and sometimes irregular and oblique. Left valve more or less strongly convex, its umbonal portion being prominent and strongly incurved, and projecting beyond the hinge line. Test thick and strong in the dorsal portion and thin in the ventral. Surface of both valves having a plain aspect, but in the case of each it is marked by more or less distinct concentric lines and undulations of growth, with occasional faint traces of radiating lines, but the latter are never so distinct as they are upon the left valve of *M. marcida*. Hinge strong; the tooth of the right valve large and prominent, and those of the left valve supported upon a strong plate.

The longest right valve in the collection measures about 50 millime-

ters, but the shape and dimensions of the shell are so variable that it is impracticable to give any precise measurements.

Compared with the preceding species, with which it is associated, this species is more robust, has a smoother aspect, the left valve is much more prominent and convex. The right valve is proportionally more capacious, and never has that slender, rough, and angular aspect which that of the other species presents. The general aspect of this species, especially as regards its convex and curved left valve, is much like that of some species of *Caprotina*, but the character of the surface of both valves and that of the hinge seem to agree essentially with *Monopleura*. All the specimens in the collection appear to have grown separately, and not in clusters, as *M. marcida* often did. (Museum number, 12365.)

ON A SMALL COLLECTION OF MESOZOIC FOSSILS COLLECTED IN ALASKA BY MR. W. H. DALL, OF THE UNITED STATES COAST SURVEY.

During the years 1840-'42, Ilia Vosnessensky, while making zoological collections along the west coast of North America, obtained also a few fossils from Alaska. These were published by Constantine Grewingk, in *Verhandlungen der Russisch-Kaiserlichen Mineralogischen Gesellschaft zu St. Petersburg*, for the years 1848 and 1849, pp. 344-347. Those which Vosnessensky obtained from the Bay of Katmai, on the southern coast of Alaska, Grewingk referred to the Jurassic; and some others, from Kodiak Island, he referred to the Tertiary. In the work presently to be noticed, Eichwald, however, declares the former to be of Neocomian, and the latter of Turonian age.

Alaska and the Aleutian Islands were visited during the years 1847-'52, by Peter Doroschin, a Russian mining engineer, who made some important collections of Mesozoic fossil mollusks from various localities in that region. Professor Eichwald, in 1872, published these fossils in St. Petersburg, together with other fossils which Doroschin had collected in the region of the Caspian Sea, the title of the work being, "*Geognostisch-Palaeontologische Bemerkungen ueber die Halbinsel Mangischlak und die Aleutischen Insel.*" In that work, under the subtitle "*Fossile Thiere des Neocom und Gault,*" pages 158-200, he describes sixty-two species of Mesozoic fossil mollusks from Alaska and the Aleutian Islands, and devotes sixteen plates to their illustration. It is this portion of Doroschin's collection that I propose to more especially refer to in this article, because I have now to consider a small collection of fossils from Alaska which probably came from the same formation. Eichwald is positive in his reference of this part of Doroschin's collection mainly to the Neocomian division of the Cretaceous, but in part to the Gault. He identifies certain species found in Alaska with some of those which have been long known in Russian strata, and which Keyserling referred to the Jurassic. Geologists have generally accepted this reference; but in the work on Alaskan fossils just referred to, Eichwald states that the Russian strata which bear the fossils alluded to are of Neocomian, and not of Jurassic age. He also regards the Russian and Alaskan strata which bear those fossils respectively as geologically equivalent, and makes at least one Alaskan species identical with a Russian one.

Prof. Jules Murrou^{*} has called attention to the fact that there is a

^{*} *Publication d'une seconde edition de la Carte Géologique de la Terre: by Jules Murrou, pp. 191 and 137-140.*

commingling of Jurassic and Lower Cretaceous types in both the Russian and Alaskan strata which have just been referred to; and that a similar condition of things exists in the island of Saghalin, and other portions of Northern Asia.

The Mesozoic collections which were made by Doroschin in Alaska are very important, but Eichwald's publication gives no comprehensive sketch of the geology of the Alaskan region. He refers some of the fossils from Chasik Island to the Gault, and some to the Neocomian; but he gives no description of two separate Mesozoic formations there. For want of definite information as to the geology of the region one cannot feel certain that all the fossils which Eichwald refers to the Neocomian really came from one and the same formation. If those fossils are all strictly of the same epoch, I think Eichwald's reference of them to the Neocomian is not unreasonable, because so many of those mollusks are of Cretaceous types; and yet Marcou's statement that there is a commingling of Jurassic and Neocomian types in those northern Mesozoic strata seems to be well supported. It has been thought by some paleontologists that *Aucella* is confined to Jurassic strata; but this genus is now known to exist in strata of undoubted Cretaceous age; and if the opinion of Eichwald is accepted, it will appear that *Aucella* is more characteristic of the Cretaceous than of Jurassic strata. At least it is plain that we cannot now rely upon the presence of that genus as affording any proof of the Jurassic age of the strata which contains it.

During the prosecution of his work upon the United States Coast and Geodetic Survey along the western coast of the Alaskan Peninsula in the year 1874, Mr. W. H. Dall made a collection of Mesozoic invertebrate fossils which are of the same age as, at least a part of, those which were collected by Doroschin. In his notes, Mr. Dall designates the locality at which they were discovered, as "Fossil Point, Port Möller"; and indicates its position as approximately in longitude $160^{\circ} 31'$ west; and latitude $45^{\circ} 14'$ north. The collection consists mainly of a species of *Aucella*, which is evidently identical with the forms which are figured on Eichwald's Plate XVII (*loc. cit.*); the specimens of which collection, like those of Doroschin's, are all in the condition of natural casts. The collection also contains a single valve of a species of *Cyprina*, and some fragments of a remarkably slender Belemnite. This collection is now the property of the United States National Museum; and permission to use it in the preparation of this article has been given by the Director of the Museum.

Two years previous to Mr. Dall's labors in Alaska, the same region was visited by M. Alph.-L. Pinart, who obtained some fossil shells of Mesozoic age upon the eastern side of the Alaskan peninsula. These fossils evidently came from the same formation that furnished the shells which are figured by Eichwald on his Plate XVII. M. Pinart, in his report, entitled "*Voyages a la cote Nord-Ouest de l'Amerique,*" desig-

nates the two localities from which the fossils just mentioned were obtained, as "le baie d'Amakshak, pres Soutkhoun; et le baie de Nak-khalilik, pres du volcan Chighinagak." The former locality is approximately in latitude $56^{\circ} 50'$; longitude $159^{\circ} 40'$ west; and the latter, in latitude $56^{\circ} 58'$; longitude $159^{\circ} 10'$ west.

The fossils which were collected by M. Pinart were discussed by M. P. Fischer, in the report just cited, under the subtitle, "Sur quelques Fossiles de l'Alaska," pages 33-36, Plate A. Only two species were obtained by Pinart from the localities just mentioned, one of which Fischer places under *Pholadomya* (*Homomya*), but he gives it no specific name. The other he refers to the *Aucella concentrica* of Fischer.

I am in some doubt as to whether Dall and Pinart collected from the same locality in any case, but I think it probable that Dall's locality on the western side of the Alaskan peninsula, and Pinart's localities on the eastern side, had all been previously visited by Doroschin. It is quite evident, however, that the strata from which they respectively collected specimens of *Aucella* all belong to one and the same horizon. If the Mesozoic collections of Dall and Pinart, and also that part of Doroschin's collection which Eichwald refers to the Neocomian, all really came from one and the same formation, the fauna thus represented has certainly much of Cretaceous, as well as of Jurassic character. This is true, even after excluding those species of Doroschin's collection which Eichwald refers to the Gault, and of course all that he refers to the Turonian. Still, this fauna has enough of Jurassic character, according to the views which have hitherto been generally entertained by paleontologists, to suggest that the strata which bear it occupy a transitional position, as indicated by Marcou. According to views now generally held by naturalists, transitional faunas ought to occur between all those which especially characterize each epoch respectively, and the suggestion of such a case for this Alaskan fauna seems to me to be reasonable.

Certain of the Cretaceous strata of Texas have been doubtfully referred to the Neocomian, but with this exception, no North American strata south of the northern limit of the United States have hitherto been referred to the lower division of the Cretaceous series, and a broad hiatus has appeared to exist between those northern strata and the lowest of the Cretaceous rocks yet known south of the limit just referred to. Within a few years past, however, the labors of Dr. George M. Dawson in the coast region of British Columbia, have brought to light some series of fossils which Mr. Whiteaves thinks prove the strata carrying them to be of the age of the Middle Cretaceous, and the upper part of the Neocomian. (See Trans. Roy. Soc. Canada, Sec. IV, 1882, p. 81.) Lately also, some Ammonites have been sent to the United States National Museum by Mr. James G. Swan, from Skonum Point, British Columbia, which are suggestive of the earliest Cretaceous, if not of Jurassic age, and they will doubtless be found to hold an important relation to the Cretaceous strata examined by Dr. Dawson, and

also to the Alaskan Mesozoic strata which bear the fossils described in this article. In fact, it seems now to be evident that it is along the west coast of North America, from California to Alaska, that we are to look for the lower portion of the Cretaceous series on this continent. While these northwestern strata seem to be certainly older than the oldest of the Cretaceous strata in all that broad region occupied by Dakota, Montana, Wyoming, Colorado, and Utah, it is nevertheless true that in all that great region, where the Cretaceous and Jurassic strata are both exposed, the former seems always to rest conformably upon the latter. This apparent conformability over so wide a region shows how cautious one ought to be in concluding that deposition has been continuous in all cases where there is perfect conformity of strata, even if it is of great extent.

A consideration of these Alaskan fossils would be much more interesting if we had a satisfactory knowledge of the stratigraphical geology of the region from which they were obtained. A sketch of the geology of the Alaskan Peninsula, which, although brief, is the best with which I am acquainted, is given by Mr. Dall in the American Journal of Science for July, 1882, pp. 67 and 68. This sketch shows the relations of the rock-formations of that peninsula to each other; and one may obtain from it also an indication of the formation from which the fossils described in this article were obtained.

Fig 9-11 = *A. niflata* Lohman
MOLLUSCA p. 40, pl. IV fig 12-14.

Genus AUCELLA Keyserling.

AUCELLA CONCENTRICA Fischer (variety).

(Plate VI, Figs. 2-12.) Fig 2-12 *

The different species of *Aucella* which have been recognized and published by various authors present so few salient characteristics which distinguish them from each other that, excepting a consideration of their general or average shape, a detailed description of any of them is necessarily hardly anything more than a repetition of generic characters. Such would certainly be the case in attempting to diagnose the form now under consideration. This form also varies so much in shape that an attempt to compare it with other published forms in that respect is also unsatisfactory. I therefore omit descriptive details, and give numerous figures, which illustrate some of the extreme shapes which this Alaskan shell assumes. The specimens which are figured on Plate VI are selected from the Alaskan collection of Mr. Dall, which has already been mentioned. A glance at these figures will show that they present almost as great a degree of variation among themselves as is usually found among the illustrations of the different species of *Aucella* which have hitherto been published by different

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* (1) Fig 2-12 = *A. subrotundoides* Lohman
Mem. Can. Geol. Surv. Vol VIII. No. 1 p. 39. pl. 7

authors. If, for example, the specimens which are represented by Figs. 2 and 3, and 9 and 10, respectively, had been found alone and at different localities, I think few paleontologists would have hesitated to publish them as different species. The specimens are all in the condition of natural casts and molds, and therefore all the surface characteristics of the species are not shown. Fig. 12 is drawn from a gutta-percha cast, taken from a natural mold of part of a shell, and shows the strong, sharp, concentric ridges which marked the surface of the test. (The Museum record number of the type specimens is 12360.)

The numerous specimens of this collection show such a gradation of form among themselves that I cannot doubt that they are all properly referable to one and the same species. Comparing these specimens also with the figures of Alaskan forms of *Aucella* which are given by M. Fischer on his Plate A, and also with those given by Eichwald on Plate XVII (loc. cit.), I cannot doubt that they are all specifically identical with each other, nor that they all represent only one species. I have, however, some doubt as to which of the known European species of *Aucella* the Alaskan form ought to be referred to; but as it seems to agree more nearly with *A. concentrica* Fischer, I have designated it as a variety of that species.

Genus CYPRINA Lamarck.

CYPRINA ? DALLII (sp. nov.).

(Plate VI, Fig. 1.)

Shell moderately large, and having the usual external aspect of *Cyprina*, as is shown by the figure on Plate VI.

The collection made by Mr. Dall contains only a single example of this form, and that is in the condition of a natural cast of the right valve. It is therefore too imperfect for satisfactory specific diagnosis, and it is named only for convenience in any future discussion of the fauna of which it forms a part. (The Museum catalogue number is 12362.)

Genus BELEMNITES Lamarck.

BELEMNITES MACRITATIS (sp. nov.).

(Plate VI, Figs. 13 and 14.)

The collection made by Mr. Dall contains some imperfect specimens of a remarkably slender Belemnite, imbedded in fragments of hard sandstone, together with some natural molds of a couple of more perfect examples. They are very slender, and taper gradually to a blunt point at the distal end. The extreme proximal end is unknown.

The very slender form of this species at first led me to suppose it to

be a species of the Pennatulid genus *Graphularia* of Edwards & Haime. It has, however, not only the usual radiate and concentric structure of *Belemnites*, but one of the examples shows plainly the cavity of the phragmocone, with a small bulb-cavity at its point. Another example shows a faint longitudinal groove along one side, such as is common in both *Belemnites* and *Belemnitella*. (Museum catalogue number, 12361.)

Dr. Eichwald, in the work already cited, describes three species of *Belemnites* from Chasik Island, and one from the Alaskan Peninsula; but the species here described differs materially from all of them in its small size and very slender form.

ON THE NAUTILOID GENUS ENCLIMATOCERAS HYATT,
AND A DESCRIPTION OF THE TYPE SPECIES.

In the year 1880 Mr. E. O. Ulrich sent to the Smithsonian Institution a small collection of fossils which he had obtained from the Cretaceous strata near Little Rock, Ark. A part of these fossils were described by me in Vols. III and IV of Proceedings of the United States National Museum; but the Nautiloid shell now described was then only casually noticed. Its peculiarities were recognized at that time, and the specimens were laid aside with the hope that better material might be procured for study. Other specimens belonging to this or a closely related species were afterward collected by Mr. Lawrence C. Johnson from strata supposed to be of Cretaceous age, in Wilcox County, Alabama, but they are no more perfectly preserved than the Arkansas specimens.

Prof. Alpheus Hyatt having had in hand an exhaustive work on *Nautilus* and its allies, the Arkansas specimens were placed with him for examination. In a preliminary work of his, just published, he divides the genus *Nautilus* as it has been generally recognized, into numerous genera besides those previously proposed by other authors. To one of these groups he has given the generic name *Enclimatoceras*, and made the species here described the type of the genus. The following is his generic diagnosis, which he has also published in the Proceedings of the Boston Society of Natural History, Vol. XXII, 1884, p. 270.

Genus ENCLIMATOCERAS Hyatt.

"*Enclimatoceras* includes species of the Trias to the Tertiary, inclusive, which are connected by the outlines of their sutures. The whorls are involute from an early stage, and compressed. The abdomens are rounded, but become acute in many species. The sutures have prominent ventral saddles, flattened in species with rounded abdomens, and acute in those with acute abdomens; never divided by ventral lobes. The lateral lobes are deep, and the lateral saddles well marked. The ventral saddles in the young are broad, and closely resemble the ventrals of the *Hercoglossæ*, as do also the broad lateral saddles of the later larval stages in some species. There are no annular lobes at any stage in the Triassic, according to Mojsisovics. They do not seem to be present in some of the Jurassic and Cretaceous species, at least during the early stages, and are very small in some adults. The Triassic species are nearly related to *Grupoceras*, according to Mojsisovics' figures and descriptions in 'Das Gebirge um Hallstatt.' The siphon in this type is a little below the center in the young, though ventral in the adult; and this also agrees with the characteristics of *Enclimatoceras styriacus*, sp.

Mojsisovics, of the Trias, and *Grupoceras*. Nevertheless there is no ventral lobe at any stage; the annular lobe is absent in the Triassic forms, and young of later forms; and the siphon in two species is short-funneled, with connective walls, or ellipchoanoidal. Type, *Enclim. (Naut.) ulrichi* White."

ENCLIMATOCERAS (NAUTILUS) ULRICHI White.

(Plates VII, VIII, and IX.)

Shell moderately large; somewhat narrowly but regularly rounded upon the periphery in the adult state, and broadly rounded at the sides; whorls almost completely involute, the umbilici being very small; septa somewhat deeply concave; ventral saddles large, prominent, and regularly rounded; lateral lobes broad and moderately deep; lateral saddles prominent and narrow, and rounded at the outer end, and also becoming laterally prominent in the later formed septa of adult shells. The character of the surface is unknown, but it was apparently plain; and the test was moderately thin. In the young state the shell was more globose in form, and the septa were much less deeply lobed.

All the specimens which have yet come under my observation are in the condition of natural casts, and all are imperfect. The best one of these specimens is figured on Plates VII, VIII, and IX, together with a fragment showing the inner volutions. The outlines which are added to the figures represent the supposed outline of the aperture of the adult shell.

The diameter of the coil of the type specimen, when perfect, was apparently about 180 millimeters; the greatest transverse diameter about 125 millimeters. Some of the specimens already referred to, which were collected in Alabama by Mr. Johnson, indicate a considerably larger size.

In Vol. I of the Transactions of the Saint Louis Academy of Science Dr. Shumard described a form under the name of *Nautilus texanus*, but which he did not figure. Judging from his description, it seems to agree with the form here described, except for the material difference that it is marked by numerous flexuous transverse ribs, while the surface of our form is evidently plain. The difference between *E. ulrichi* and most of the other Cretaceous Nautiloid shells of the United States has now been made generic by Professor Hyatt, and specific comparisons are therefore unnecessary. The collection sent by Mr. Ulrich to the Smithsonian, containing the type specimens of this species, also contains representatives of numerous other species, but all of them, like these types, are imperfect. Among them are *Callianassa ulrichi* White, *Lubulosteum dickhauti* White, *Gryphæa pitcheri* Morton?, *Turritella*, *Anchura*, *Axinæa*, *Cucullæa*, &c.

The type specimens bear the Museum catalogue number 8349; and permission to use them in the preparation of this article has been given by the Director of the Museum.

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the first of the year, the weather was very cold, and the snow lay deep upon the ground. The wind was very strong, and the rain was very much increased. The people were very much distressed, and the cattle were very much starved.

The second of the year, the weather was very cold, and the snow lay deep upon the ground. The wind was very strong, and the rain was very much increased. The people were very much distressed, and the cattle were very much starved.

The third of the year, the weather was very cold, and the snow lay deep upon the ground. The wind was very strong, and the rain was very much increased. The people were very much distressed, and the cattle were very much starved. The fourth of the year, the weather was very cold, and the snow lay deep upon the ground. The wind was very strong, and the rain was very much increased. The people were very much distressed, and the cattle were very much starved. The fifth of the year, the weather was very cold, and the snow lay deep upon the ground. The wind was very strong, and the rain was very much increased. The people were very much distressed, and the cattle were very much starved. The sixth of the year, the weather was very cold, and the snow lay deep upon the ground. The wind was very strong, and the rain was very much increased. The people were very much distressed, and the cattle were very much starved. The seventh of the year, the weather was very cold, and the snow lay deep upon the ground. The wind was very strong, and the rain was very much increased. The people were very much distressed, and the cattle were very much starved. The eighth of the year, the weather was very cold, and the snow lay deep upon the ground. The wind was very strong, and the rain was very much increased. The people were very much distressed, and the cattle were very much starved. The ninth of the year, the weather was very cold, and the snow lay deep upon the ground. The wind was very strong, and the rain was very much increased. The people were very much distressed, and the cattle were very much starved. The tenth of the year, the weather was very cold, and the snow lay deep upon the ground. The wind was very strong, and the rain was very much increased. The people were very much distressed, and the cattle were very much starved.

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EXPLANATION OF PLATES.

PLATE I.

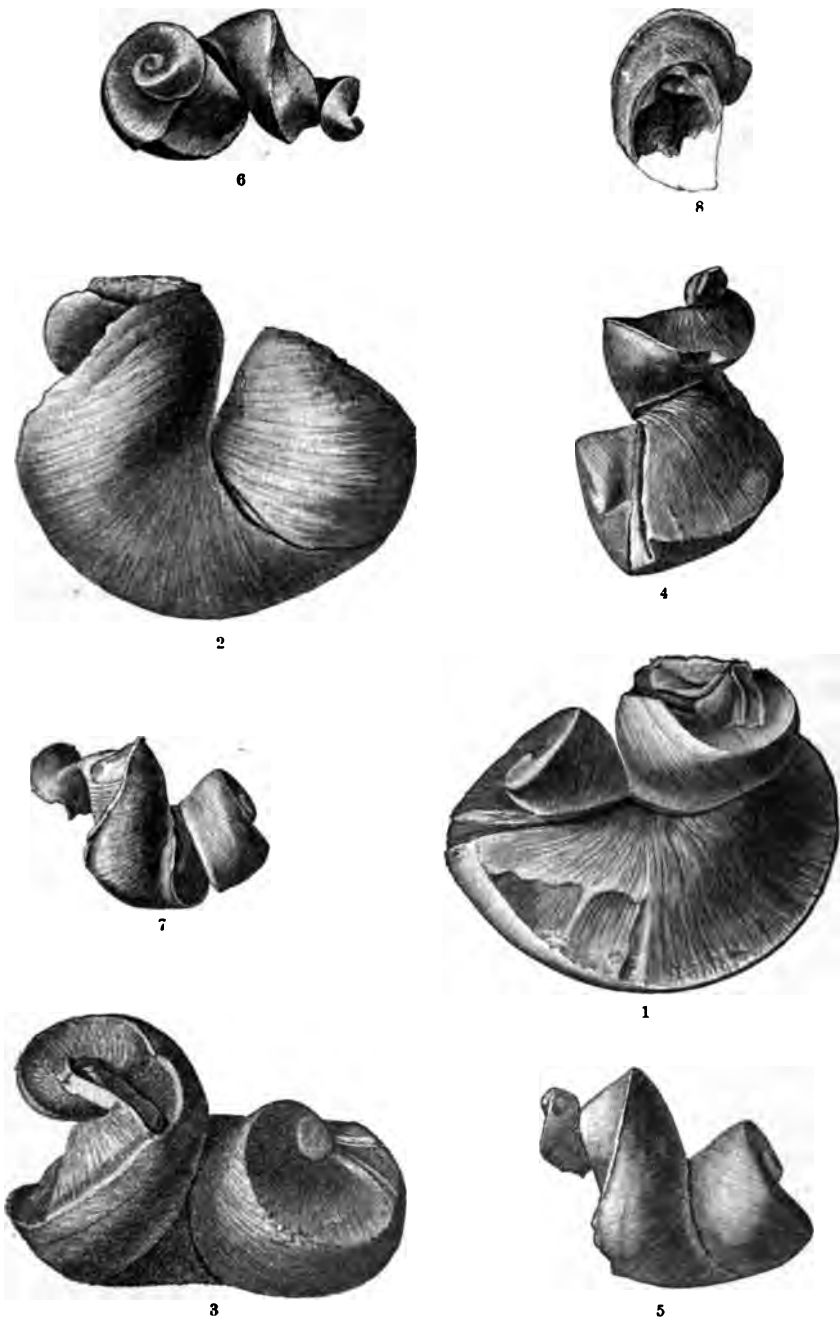
REQUINELLA PATAGIATA. (Page 6.)

FIGS. 1, 2, 3.—Three different views of one of the largest of the type specimens; both valves together.

FIGS. 4, 5.—Two views of a smaller example.

FIGS. 6, 7.—Two views of another example, showing the two valves partly separated.

FIG. 8.—A portion of a left valve, showing the hinge. All of natural size. For other figures of this species see Plate II.



REQUIENIA PATAGIATA.



PLATE II.

REQUIENIA PATAGIATA. (Page 6.)

FIGS. 1, 2.—Two views of a small example; both valves together.

FIG. 3.—Upper view of a large and somewhat distorted example.

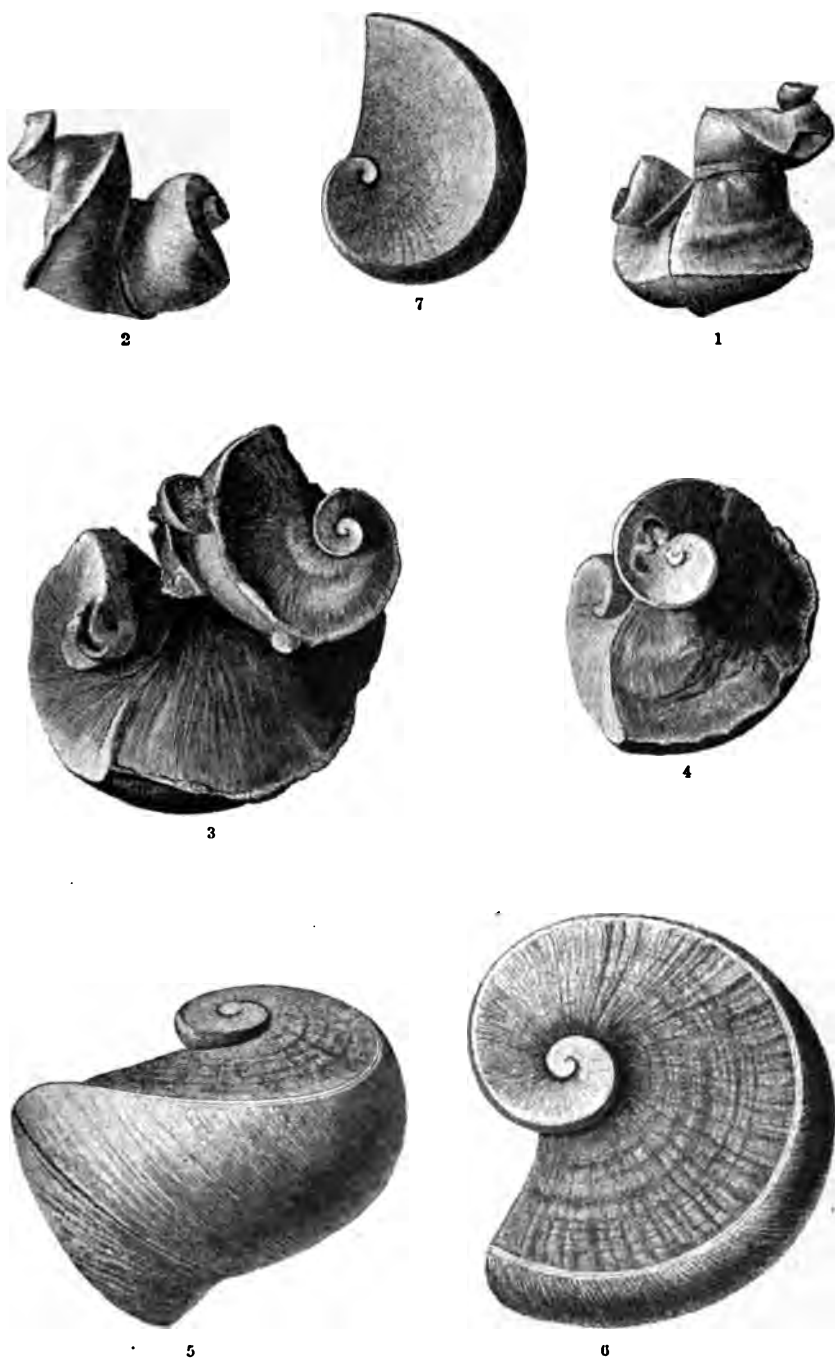
FIG. 4.—A similar view of a smaller distorted example. All of natural size. For other figures of this species see Plate I.

REQUIENIA TEXANA. (Page 7.)

FIG. 5.—Lateral view; the two valves together.

FIG. 6.—Upper view of the left valve.

FIG. 7.—Similar view of the right valve. Figures 5, 6, and 7 are after Roemer; all of natural size.



REQUIENIA PATAGIATA—*REQUIENIA TEXANA*.



PLATE III.

MONOPLEURA MARCIDA. (Page 8.)

- FIGS. 1, 2.—Opposite lateral views of a cluster of individuals, the larger ones being attached to a left valve of another example.
- FIG. 3.—An upper view of the same example, showing the hinge of the largest right valve, and the left valves of the other members of the cluster in situ.
- FIG. 4.—Inner surface of the left valve which forms the base of the cluster represented by Figs. 1, 2, and 3.
- FIG. 5.—A separate example, showing both valves.
- FIG. 6.—Another example, also showing both valves.
- FIG. 7.—A right valve, showing the slender ligamental groove.
- FIG. 8.—Another slender right valve, also showing the groove.
- FIG. 9.—Interior view of the same example, showing the hinge.
- FIG. 10.—A similar view of the hinge of another example, which is attached to a right valve of *Requienia patagiata*. All are of natural size. For other examples see Plate IV.



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8



10



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2



9



1



PLATE IV.

MONOPLEURA MARCIDA. (Page 8.)

- FIG. 1.—Lateral view; the right valve attached to a foreign body, and the left valve bearing two young examples of *Regulina patagica*.
FIG. 2.—Lateral view of another example, the left valve bearing a young *Regulina*.
FIG. 3.—A similar view of another example, which also shows both valves.
FIGS. 4, 5.—Opposite views of a large distorted example; both valves together.
FIGS. 6, 7.—Opposite views of another example, also showing both valves.
FIGS. 8, 9.—Opposite views of a cluster of very young individuals attached to a corallite of *Cladophyllia*. All are of natural size. For other examples of this species see Plate III.



7



9



6



8



3



2



1



4



5

MONOPLEURA MARCIDA.



•

PLATE V.

MONOPLEURA PINGUISCULA. (Page 8.)

- FIGS. 1, 2.**—Opposite views of a large example, showing both valves.
FIGS. 3, 4.—Opposite views of a distorted example, showing both valves.
FIG. 5.—Another example; the right valve much elongated.
FIG. 6.—Another example; the right valve much distorted.
FIG. 7.—Another example, showing the hinge-plate of the broken left valve.
FIG. 8.—A right valve, showing the hinge. All natural size.



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MONOPLEURA PINGUISCULA.

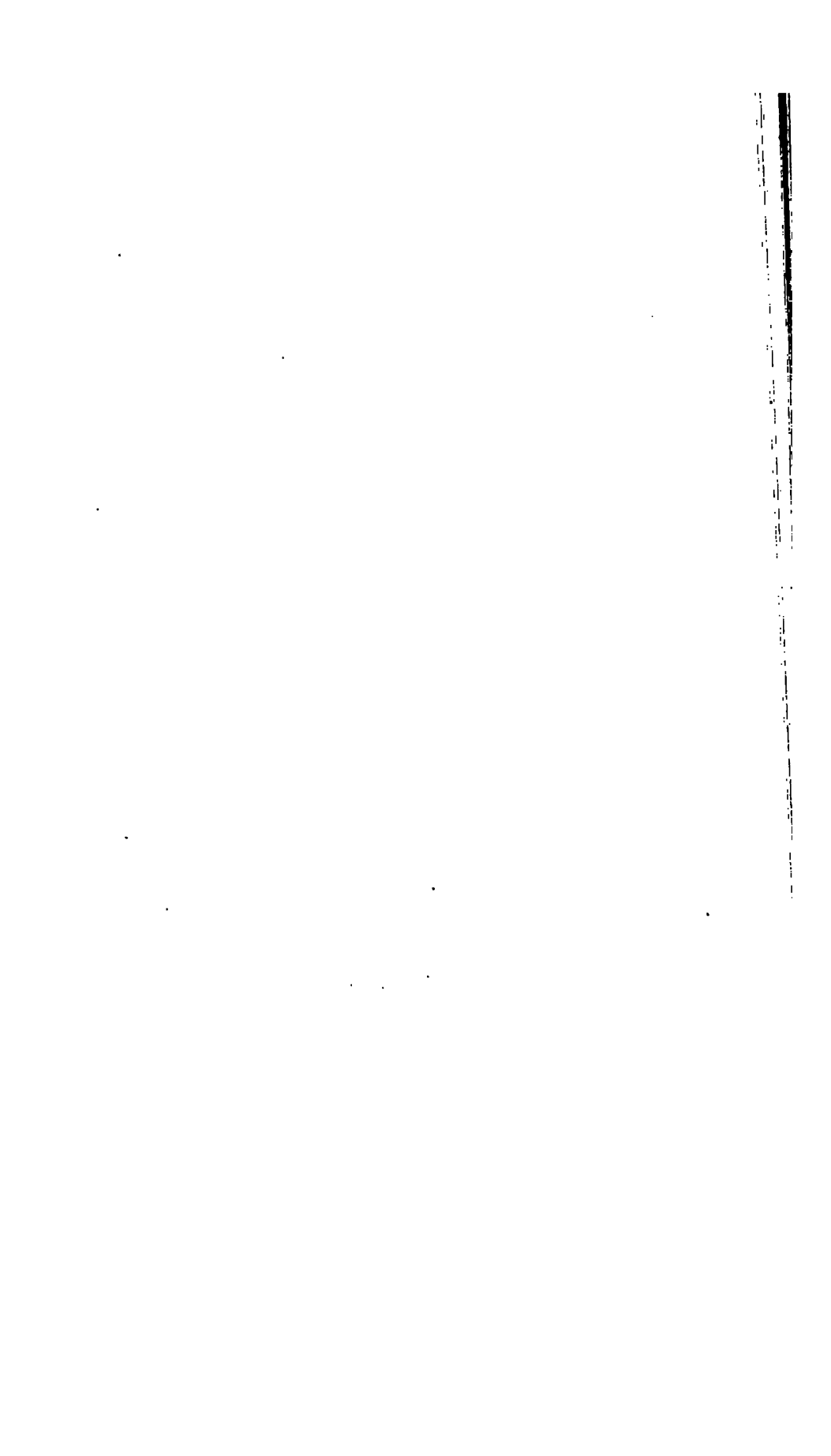


PLATE VI.

CYPRINA? DALLI. (Page 14.)

FIG. 1.—Lateral view of a natural cast of the interior of a right valve.

AUCELLA CONCENTRICA var. (Page 13.)

FIGS. 2, 3.—Two views of an internal cast of an adult example of normal shape.

FIGS. 4, 5.—Two views of another example, of smaller size.

FIGS. 6, 7.—Two views of still another similar example.

FIG. 8.—View of a left valve of one of the largest examples.

FIGS. 9, 10.—Two views of an unusually short and inflated example.

FIG. 11.—The left valve of another short example.

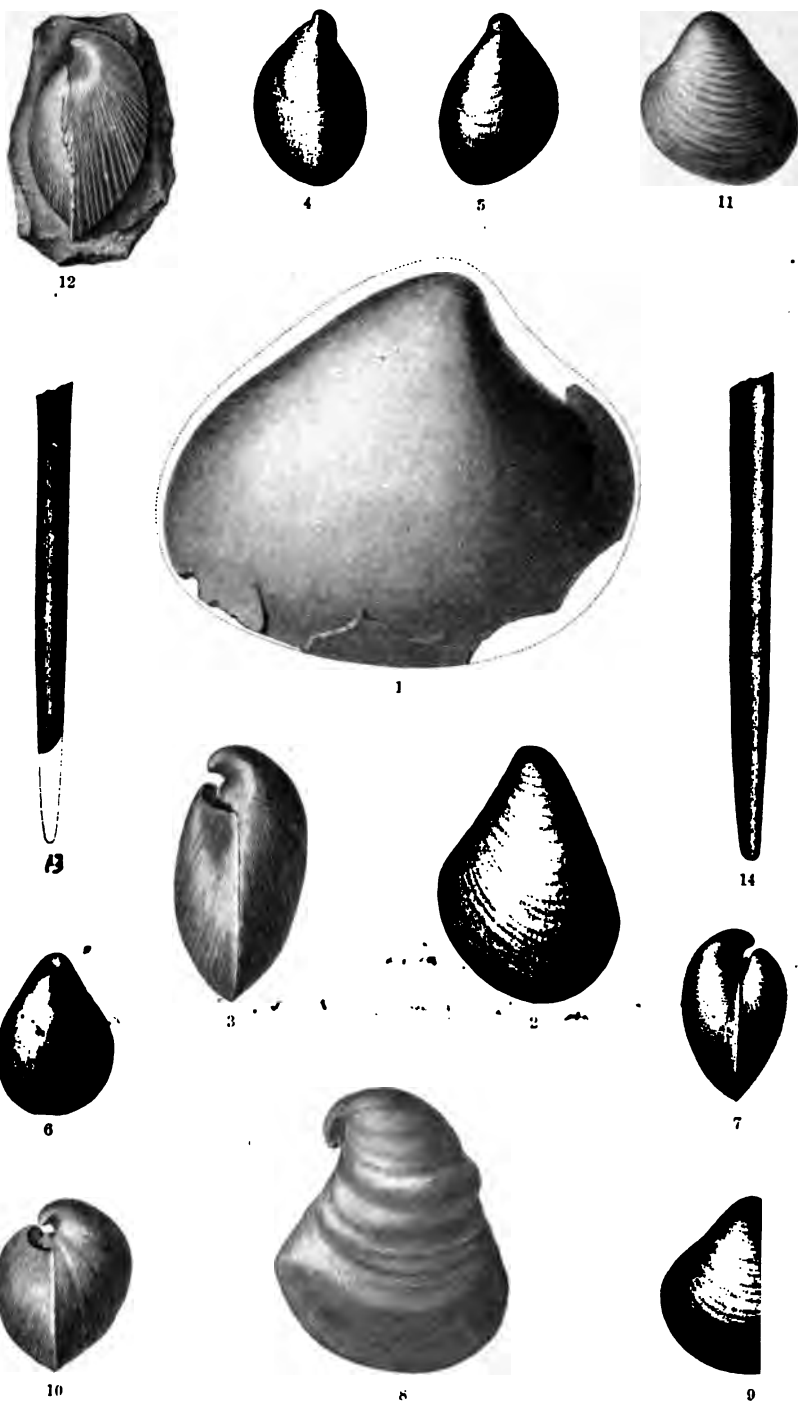
FIG. 12.—View of a gutta-percha cast from a natural mold of part of a shell, showing the concentric lamellations of the test. All of natural size.

BELKNITES MACRITATIS. (Page 14.)

FIG. 13.—A fragment, showing the terminal portion of the phragmocone.

FIG. 14.—View of a gutta-percha cast of a natural mold. All of natural size.

Figs 2-7 = *A. strabrotuloides* Loebner,
 m. Com. Geol. Russia, vol VIII No 1, p. 39, pl. II fig 1-7.
 9-11 = *A. inflata* Loebner, p. 40, pl. II fig 12-17.
 8 = *A. crassicollis* Kiprinsky, Loebner, p. 42,
 pl. II fig 5-6.



CYPRINA ? DALLII, AUCELLA CONCENTRICA VAR., AND BELEMNITES MACRITATIS.

PLATE VII.

ENCALMATOCERAS ULRICH. (Page 17.)

FIG. 1.—Lateral view of the type specimen, four-fifths natural size.

FIGS. 2, 3.—Two views of a fragment, showing the inner volutions. For other figures see Plates VIII and IX.

[illegible]



2



3



1

ENCLIMATOCERAS ULRICHI.

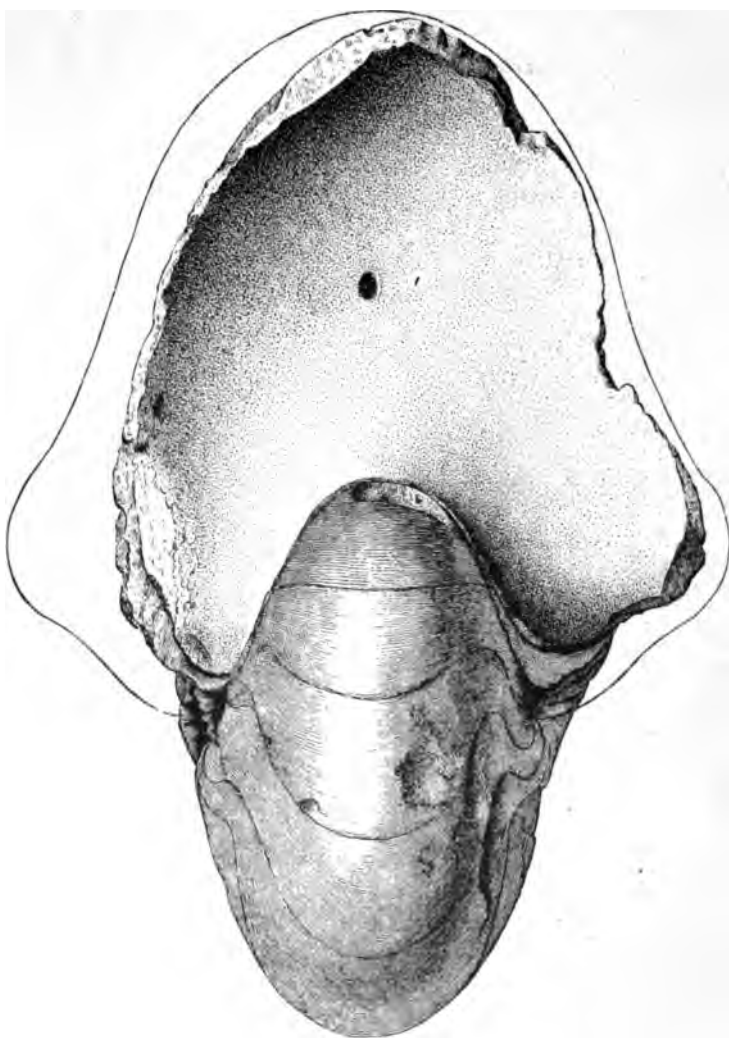




PLATE VIII.

ENCLIMATOCERAS ULRICHI. (Page 17.)

Front view of the type specimen, four-fifths natural size. For other figures see Plates VII and IX.



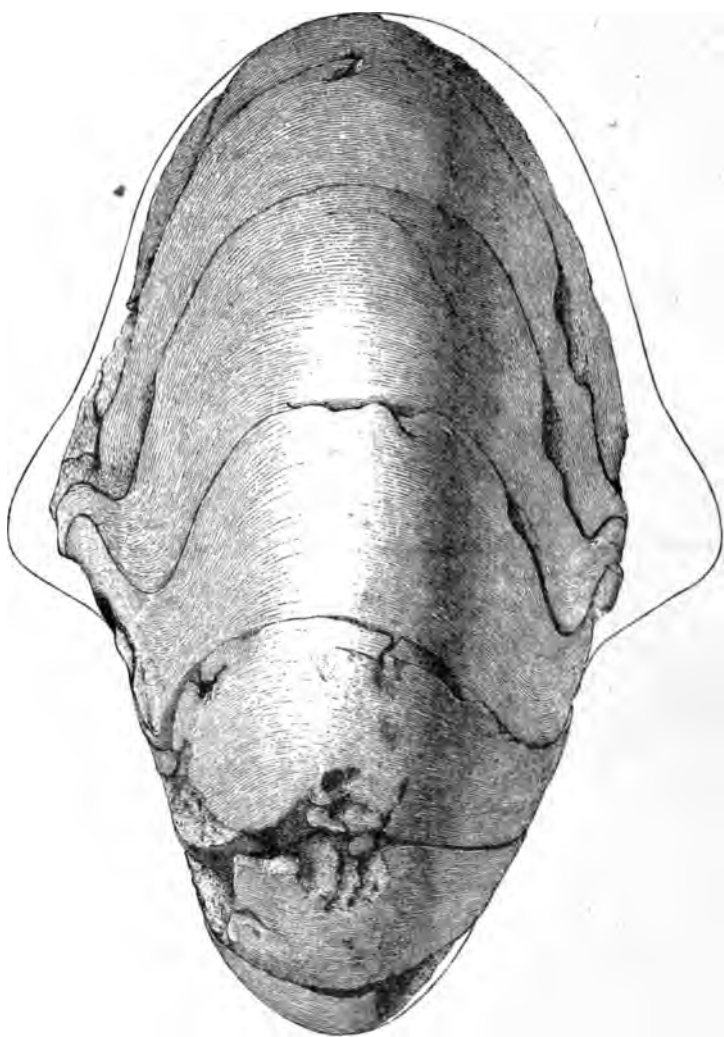
ENCLIMATOCERAS ULRICHI.



PLATE IX.

ENCLIMATOCERAS ULRICHL. (Page 17.)

Peripheral view of the type specimen, four-fifths natural size. For other figures see
Plates VII and VIII.



ENCLIMATOCERAS ULRICHI.



ADVERTISEMENT.

(Bulletin 5.)

The publications of the United States Geological Survey are issued in accordance with the statute, approved March 3, 1879, which declares that—

"The publications of the Geological Survey shall consist of the annual report of operations, geological and economic maps illustrating the resources and classifications of the lands, and reports upon general and economic geology and paleontology. The annual report of operations of the Geological Survey shall accompany the annual report of the Secretary of the Interior. All special memoirs and reports of said Survey shall be issued in uniform quarto series if deemed necessary by the Director, but otherwise in ordinary octavos. Three thousand copies of each shall be published for scientific exchanges and for sale at the price of publication; and all literary and cartographic materials received in exchange shall be the property of the United States and form a part of the library of the organization. And the money resulting from the sale of such publications shall be covered into the Treasury of the United States."

ANNUAL REPORTS.

From the above it will be seen that only the Annual Reports, which form parts of the reports of the Secretary of the Interior and are printed as executive documents, are available for gratuitous distribution. A number of these are furnished the Survey for its exchange list, but the bulk of them are supplied directly, through the document rooms of Congress, to members of the Senate and House. Except, therefore, in those cases in which an extra number is supplied to this office by special resolution, application must be made to members of Congress for the Annual Reports, as for all other executive documents.

Of these Annuals there have been already published:

I. First Annual Report to the Hon. Carl Schurz, by Clarence King. 1880. 8°. 79 pp. 1 map.—A preliminary report describing plan of organization and publications.

II. Report of the Director of the United States Geological Survey for 1880-'81, by J. W. Powell. 1882. 8° lv, 588 pp. 61 pl. 1 map.

III. Third Annual Report of the United States Geological Survey, 1881-'82, by J. W. Powell. 1883. 8°. xviii, 564 pp. 67 pl. and maps.

IV. Fourth Annual Report of the United States Geological Survey, 1882-'83, by J. W. Powell. 1884. 8°. xii, 478 pp. 85 pl. and maps.

No copies of the Fourth Annual have as yet been ordered by Congress for distribution by the Geological Survey.

MONOGRAPHS.

The Monographs of the Survey are printed for the Survey alone, and can be distributed by it only through a fair exchange for books needed in its library, or through the sale of those copies over and above the number needed for such exchange. They are not for gratuitous distribution.

So far as already determined upon, the list of these Monographs is as follows:

I. The Precious Metals, by Clarence King. In preparation.

II. Tertiary History of the Grand Cañon District, with atlas, by Capt. C. E. Dutton. Published.

III. Geology of the Comstock Lode and Washoe District, with atlas, by George F. Becker. Published.

IV. Comstock Mining and Miners, by Eliot Lord. In press.

V. Copper-bearing Rocks of Lake Superior, by Prof. R. D. Irving. In press.

VI. Older Mesozoic Flora of Virginia, by Prof. William M. Fontaine. In press.

VII. Silver-lead Deposits of Eureka, Nevada, by Joseph S. Curtiss. In press.

VIII. Paleontology of the Eureka District, Nevada, by Charles D. Walcott. In press.

Geology and Mining Industry of Leadville, with atlas, by S. F. Emmons. In preparation.

Geology of the Eureka Mining District, Nevada, with atlas, by Arnold Hague. In preparation.

Coal of the United States, by Prof. R. Pumpelly. In preparation.

Iron in the United States, by Prof. R. Pumpelly. In preparation.

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Dinocerata. A monograph on an extinct order of Ungulates, by Prof. O. C. Marsh. In press.

Sauropoda, by Prof. O. C. Marsh. In preparation.

Stegosauria, by Prof. O. C. Marsh. In preparation.

Of these Monographs, Nos. II, III, and IV are now published, viz:

ADVERTISEMENT.

- II. Tertiary History of the Grand Cañon District, with atlas, by C. E. Dutton, Capt. U. S. A. 4^{to}. 264 pp., 42 pl. and atlas of 26 double sheets folio. Price \$10.12.
- III. Geology of the Comstock Lode and Washoe District, with atlas, by George F. Becker. 4^{to}. 422 pp. 7 pl. and atlas of 21 sheets folio. Price \$11.
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Of this series of Bulletins, Nos. 1, 2, 3, 4, and 5 are already published, viz:

1. On Hypersthene-Andesite and on Triclinic Pyroxene in Augitic Rocks, by Whitman Cross, with a Geological Sketch of Buffalo Peaks, Colorado, by S. F. Emmons. 1883. 8^o. 42 pp. 2 pl. Price 10 cents.
2. Gold and Silver Conversion Tables, giving the coining value of Troy ounces of fine metal, &c., by Albert Williams, jr. 1883. 8^o. 8 pp. Price 5 cents.
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5. A Dictionary of Altitudes in the United States, by Henry Gannett. 1884. 8^o. 325 pp. Price 20 cents.

Nos. 6 and 7 are in press.

STATISTICAL PAPERS.

A fourth series of publications having special reference to the mineral resources of the United States is contemplated. Of that series the first has been published, viz: Mineral Resources of the United States, by Albert Williams, jr. 1883. 8^o. xvii, 513 pp. Price 50 cents.

Correspondence relating to the publications of the Survey, and all remittances—which must be by postal note or money order—should be addressed to the

DIRECTOR OF THE UNITED STATES GEOLOGICAL SURVEY,

Washington, D. C.

WASHINGTON, D. C., June 20, 1884.

DEPARTMENT OF THE INTERIOR

BULLETIN

OF THE

UNITED STATES

GEOLOGICAL SURVEY

No. 5



WASHINGTON
GOVERNMENT PRINTING OFFICE
1884

ADVERTISEMENT.

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2. Gold and Silver Conversion Tables, giving the coining value of Troy ounces of gold and silver, by Albert Williams, Jr. 1883. 8°. 8 pp. Price 5 cents.
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4. On Mesozoic Fossils, by Charles A. White. 1884. 8°. 36 pp. 9 pl. Price 5 cents.
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DEPARTMENT OF AGRICULTURE GEOLOGICAL SURVEY

DIRECTOR

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IN

GEOLOGICAL UNITED STATES

COMPILED BY

HENRY GANNETT

CHIEF GEOGRAPHER



WASHINGTON
GOVERNMENT PRINTING OFFICE

1884



UNITED STATES GEOLOGICAL SURVEY
J. W. POWELL DIRECTOR

A

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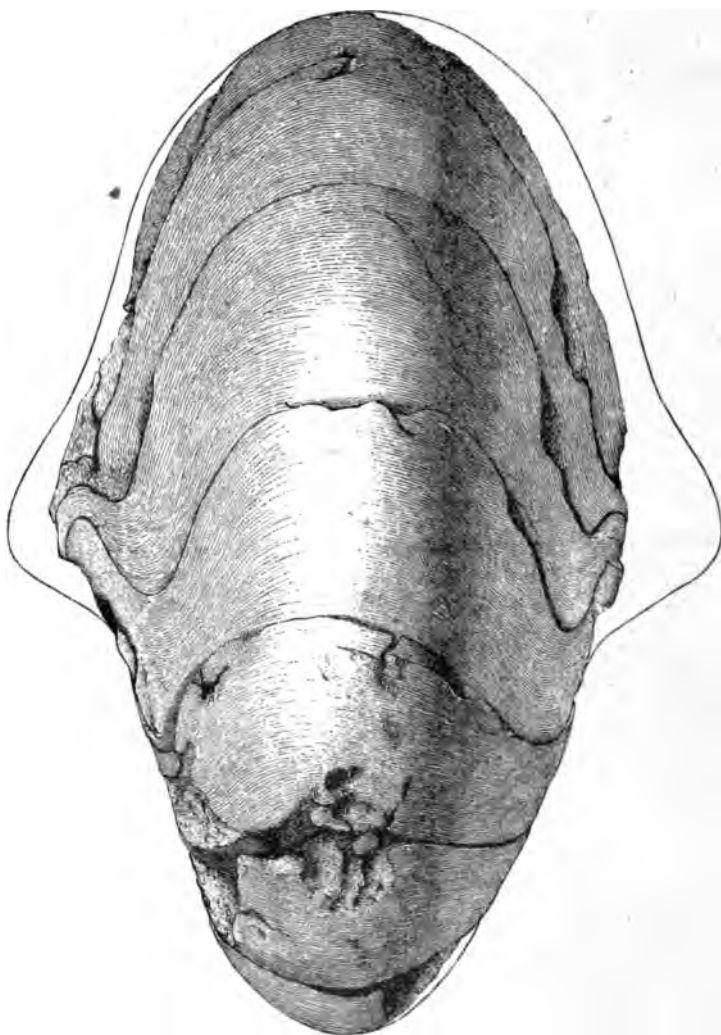


WASHINGTON
GOVERNMENT PRINTING OFFICE
1884

PLATE IX.

ENCLIMATOCERAS ULRICHI. (Page 17.)

Peripheral view of the type specimen, four-fifths natural size. For other figures see
Plates VII and VIII.



ENCLIMATOCERAS ULRICH.

ADVERTISEMENT.

(Bulletin 5.)

The publications of the United States Geological Survey are issued in accordance with the statute, approved March 3, 1879, which declares that—

"The publications of the Geological Survey shall consist of the annual report of operations, geological and economic maps illustrating the resources and classifications of the lands, and reports upon general and economic geology and paleontology. The annual report of operations of the Geological Survey shall accompany the annual report of the Secretary of the Interior. All special memoirs and reports of said Survey shall be issued in uniform quarto series if deemed necessary by the Director, but otherwise in ordinary octavos. Three thousand copies of each shall be published for scientific exchanges and for sale at the price of publication; and all literary and cartographic materials received in exchange shall be the property of the United States and form a part of the library of the organization. And the money resulting from the sale of such publications shall be covered into the Treasury of the United States."

ANNUAL REPORTS.

From the above it will be seen that only the Annual Reports, which form parts of the reports of the Secretary of the Interior and are printed as executive documents, are available for gratuitous distribution. A number of these are furnished the Survey for its exchange list, but the bulk of them are supplied directly, through the document rooms of Congress, to members of the Senate and House. Except, therefore, in those cases in which an extra number is supplied to this office by special resolution, application must be made to members of Congress for the Annual Reports, as for all other executive documents.

Of these Annuals there have been already published:

I. First Annual Report to the Hon. Carl Schurz, by Clarence King. 1880. 8°. 79 pp. 1 map.—A preliminary report describing plan of organization and publications.

II. Report of the Director of the United States Geological Survey for 1880-'81, by J. W. Powell. 1882. 8° 1v, 568 pp. 61 pl. 1 map.

III. Third Annual Report of the United States Geological Survey, 1881-'82, by J. W. Powell. 1883. 8°. xviii, 564 pp. 67 pl. and maps.

IV. Fourth Annual Report of the United States Geological Survey, 1882-'83, by J. W. Powell. 1884. 8°. xii, 478 pp. 85 pl. and maps.

No copies of the Fourth Annual have as yet been ordered by Congress for distribution by the Geological Survey.

MONOGRAPHS.

The Monographs of the Survey are printed for the Survey alone, and can be distributed by it only through a fair exchange for books needed in its library, or through the sale of those copies over and above the number needed for such exchange. They are not for gratuitous distribution.

So far as already determined upon, the list of these Monographs is as follows:

I. The Precious Metals, by Clarence King. In preparation.

II. Tertiary History of the Grand Cañon District, with atlas, by Capt. C. E. Dutton. Published.

III. Geology of the Comstock Lode and Washoe District, with atlas, by George F. Becker. Published.

IV. Comstock Mining and Miners, by Eliot Lord. In press.

V. Copper-bearing Rocks of Lake Superior, by Prof. R. D. Irving. In press.

VI. Older Mesozoic Flora of Virginia, by Prof. William M. Fontaine. In press.

VII. Silver-lead Deposits of Eureka, Nevada, by Joseph S. Curtis. In press.

VIII. Paleontology of the Eureka District, Nevada, by Charles D. Walcott. In press.

Geology and Mining Industry of Leadville, with atlas, by S. F. Emmons. In preparation.

Geology of the Eureka Mining District, Nevada, with atlas, by Arnold Hague. In preparation.

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GEOLOGICAL SURVEY OF MAINE.

Most of these results are barometric.

GEOLOGICAL SURVEY OF NEW HAMPSHIRE.

Elevations of towns credited to this source are, in the main, from levels; those of mountain summits are from barometric work.

GEOLOGICAL SURVEY OF NEW YORK.

Elevations were determined barometrically.

GEOLOGICAL SURVEY OF VERMONT.

All elevations under this authority are from barometric determinations.

GODDARD.

Determinations by level from preliminary railroad surveys made by the Central Pacific R. R. Co., of California. Like all preliminary work, these figures are not in the highest degree reliable.

GUYOT, PROF. ARNOLD.

Nearly all the elevations given under this authority are in the Appalachian region, and nearly all were determined by barometer. They are of the highest character of this class of work. Most of the figures are copied from Professor Guyot's articles in the "American Journal of Science and Arts."

HAYDEN, DR. F. V.

Under this authority is given all work done by the United States Geological Survey of the Territories. All determinations are barometric, or trigonometric resting on barometric bases. In most of this work effective measures were taken to avoid the well-known periodic errors incident to barometric work. The base-stations were placed, as nearly as possible, at the average height of the country to be surveyed. The high peaks were connected by a system of trigonometric leveling, by means of which, barometric observations, taken on different summits, were reduced to a common point. The mean results thus obtained were referred to base-stations located upon high mountain peaks.

HIND, PROF. H. Y.

Annals of the Saskatchewan Exploring Expedition, 1858.
Heights were measured by barometer.

IVES.

Report of Colorado Exploring Expedition [Thirty-sixth Congress, First Session, Senate Document].
All determinations are barometric.

JENNEY, PROF. WILLIAM P.

Heights were abstracted from the map of the Black Hills.
All determinations are barometric.

JONES, CAPT. W. A.

Report of Expedition to Northwestern Wyoming and the Yellowstone Park, 1873.

All determinations are barometric.

KING, CLARENCE.

This reference is mainly to the work of the Geological Exploration of the 40th Parallel.

All determinations are barometric, or depend upon barometric bases.

LANDER.

Heights are taken from "Report on a Railroad Route from Puget Sound to South Pass," 1854. [House Document 129.]

Elevations were determined barometrically.

LAND-OFFICE REPORTS. (L. O. REPORTS.)

Most of the heights given in these reports are the merest approximations.

LA PEROUSE.

"Voyage to the Northwestern Coast of America," 1786.

Heights were determined by trigonometric measurements from sea bases.

LUDLOW, CAPT. WILLIAM.

Under this authority are given elevations determined by his "Expedition to the Black Hills of Dakota," 1874, and his "Expedition to the Head of the Yellowstone and the Judith Basin," 1875.

Heights were measured by the barometer.

MALESPINA.

"Voyage to the Northwestern Coast of America."

Heights were measured trigonometrically from bases at sea.

MEDICAL DEPARTMENT, UNITED STATES ARMY (MED. DEPT. U. S. A.).

Nearly all heights given under this authority were determined barometrically.

MEXICAN BOUNDARY SURVEY.

Elevations were determined barometrically.

MULLAN, CAPT. JOHN.

"Explorations for a Wagon Road from Walla Walla to Fort Benton," 1862.

All heights were determined barometrically.

NEW YORK STATE SURVEY.

These results are from refined trigonometric work.

NICOLAY.

"Explorations in the Upper Mississippi Region," 1836 to 1840.
All determinations were barometric.

PACIFIC RAILROAD REPORTS (P. R. R. REPORTS).

Under this authority is included all work done by the War Department, between 1850 and 1855, for the purpose of finding a practicable railroad route from the Missouri River to the Pacific.

All the work is barometric, and, taken as a whole, is poor, owing mainly to the fact that, practically, there was no barometric base station. The hypsometric work of the expedition near the northern boundary, under Governor Stevens, was particularly bad. These remarks concerning the quality of the work apply equally well to all the earlier expeditions to the West, owing, doubtless, to the same cause.

PARRY, PROF. C. C.

Elevations were barometrically determined.

PETERMANN, DR. A.

Elevations were taken from his map of the United States.

POWELL, MAJ. J. W.

To this authority is credited the hypsometric work of the United States Geological and Geographical Survey of the Rocky Mountain Region.

PRELIMINARY RAILROAD LEVELS (PRE. R. R. LEVELS).

These are distinguished from other railroad levels, because, as a rule, the preliminary levels are of a far less degree of accuracy; the results can therefore be accepted only with caution.

RAILROADS.

Elevations determined by railroad levels are credited to the roads by which they were furnished. On page — *et seq.* will be found a list of these railroads, with the abbreviations used for them, arranged alphabetically in the order of the abbreviations. The height given is that of the track at the station. In cases where two or more railroads meet or cross at the same point on the same grade, the elevation by only one of them, and that the best known or best determined road, is given. The collection and adjustment of these levels has formed by far the greater part of the work of this compilation.

The profiles of most of the roads west of the Mississippi were col-

lected and published in "Lists of Elevations," 4th edition, in 1877. Since that time, circumstances have conspired to assist me greatly in the collection of this material in all parts of the country. In 1880, while I was connected with the Census Office, the late Chief Signal Officer, General A. J. Myer, courteously placed at the disposal of that office copies of all the material of this kind which had been collected by the Signal Office. Further, in the railroad schedule of census was inserted a request for an abstract of the profile of each road. This request was acceded to in all cases when possible, and through this means a great number of profiles from the most recent levels were received. Through the courtesy of the Census Office I have been permitted to use them in the present publication. Moreover, I have received within the past year profiles of a number of the most important roads in the country, which close up gaps in connections, and establish strong connecting links in chains of levels. In addition to the above, there were in print, principally in the reports of State geological surveys, a large number of profiles. Those of New Hampshire have been adjusted admirably and published in the report of the State Geological Survey. The same is the case with the large and complex system of Pennsylvania. The collection of profiles of this is exceptionally complete and admirably adjusted, and renders the portion of the Dictionary relating to this State by far the fullest and most satisfactory. The Geological Survey of New Jersey has published profiles of many of the roads of that State. The profiles of most of the roads of Virginia and West Virginia have been published by Maj. Jed. Hotchkiss, in his "Summary of Virginia" and the "Virginias." Profiles of most of the North Carolina roads have been published in the report of the State Geological Survey by Prof. W. C. Kerr; many of those of Alabama in the reports of Prof. E. A. Smith; of Ohio, in the State Geological Survey reports; of Indiana, in the reports of the Bureau of Statistics and Geology; of Wisconsin, Minnesota, and Iowa, in the reports of the geological surveys of those States. In this connection I desire to express my obligations to Prof. Warren Upham, of the geological and natural history survey of Minnesota, for his kind co-operation in the collection and adjustment of the railroad material in his State.

Much interest in this work has been manifested by railroad engineers, many of whom have contributed liberally of their time for the correction and proper connection of the profiles of their roads or systems of roads. Among them I should mention Mr. H. V. Hinckley, assistant engineer A., T. and S. F. R. R., who has, at great expenditure of time and labor, prepared a correct profile of his road, with its numerous branches; Mr. George H. Nettleton, president of the system of roads in southeastern Kansas; S. S. Montague, chief engineer of the Central Pacific system; and Mr. George Nealley, formerly assistant engineer on the Union Pacific Railroad, to whom I am indebted, in addition to other favors, for a correct profile of the Union Pacific Railroad.

While a great degree of success has attended my efforts for obtaining railroad profiles, there are still remaining a large number of roads, some of them of great importance, which have thus far failed to respond, owing in most cases to the fact that their records of levels have been destroyed.

The adjustment of these levels has been a most perplexing task. The errors in the compilation of the profiles themselves, and the uncertainties in the connections and crossings of different roads, together with the legitimate errors of leveling, conspire to make this work of adjustment one of the most difficult and unsatisfactory undertakings imaginable. I cannot claim that the result is by any means what could be desired, but I believe that, with the material and resources at hand, fairly good results have been obtained. The work of the United States Lake Survey in determining the heights of the Great Lakes, and of the Mississippi River Commission in determining the elevation of points along the Mississippi River, and of the transcontinental levels of the Coast and Geodetic Survey, have been accepted as starting-points.

The adjustment of the railroad levels of New Hampshire and of Pennsylvania has also been accepted, after subjecting it to tests for accuracy. The adjustment of railroad levels by Mr. James T. Gardiner, the results of which were published in the annual report of the United States Geological Survey of the Territories for 1873, was examined critically in the light of the determinations of heights made by the Coast and Lake Surveys, of the Mississippi River Commission, and the more recent and presumably more correct profiles received since the time of Mr. Gardiner's work. The changes in the heights of the Great Lakes, amounting to 7 feet (lower) in the cases of Michigan, Huron, and Superior, necessitated considerable changes in the States of Michigan, Wisconsin, and Minnesota, and the Territory of Dakota. The levels of the Mississippi River Commission lowered Cairo 12 feet, and the Saint Louis Directrix 15 feet. These corrections were even more wide-spread in their results. They induced changes throughout the whole of that portion of the country west of the Mississippi River as far as the Rocky Mountains. Eastward their effect was felt as far as Indianapolis, Ind., and the Falls of the Ohio. Aside from these changes in Mr. Gardiner's adjustment, his work has borne the tests admirably, and the results, with perhaps slight modification in certain cases, have been accepted and used for further adjustment.

It has been suggested that the method of least squares might be used to advantage in the adjustment of this material. This method does not seem to me to be at all applicable to the class of errors here encountered. These are, in the main, what may be classed as abnormal errors, due, not to want of accuracy of observations, but to mistakes, blunders, and uncertainties, a class of errors from which the method of least squares would deduce only false results.

RAYNOLDS, CAPT. W. F.

Under this authority are given the hypsometric results of the expedition of Captain Reynolds to the country about the sources of the Snake and Missouri Rivers in 1860-'61.

All the work is barometric.

RUFFNER.

"Reconnaissance in the Ute Country," 1873.

All determinations are barometric.

SIMPSON, CAPT. J. H.

"Reconnaissance in Navajo Country," 1849 [Thirty-first Congress, first session, Senate Doc. 6.]; and "Explorations in the Great Basin of Utah," 1859, published in 1876.

All determinations are barometric.

SMITHSONIAN INSTITUTION.

Most, if not all, of these elevations have been determined by barometer.

STUART, GRANVILLE.

All determinations are barometric.

TONER, DR. J. M.

Under this authority are given all heights taken from his "Dictionary of Elevations."

UNITED STATES COAST AND GEODETIC SURVEY (U. S. C. AND G. S.).

Heights have been determined by the most refined geodetic methods.

UNITED STATES ENGINEER CORPS (U. S. ENGR. CORPS).

The figures given under this authority are the results of exact levels.

UNITED STATES GEOLOGICAL AND GEOGRAPHICAL SURVEY OF THE
ROCKY MOUNTAIN REGION.

All, or practically all, heights were determined by barometer.

UNITED STATES LAKE SURVEY.

These results are from exact levels or refined trigonometric work.

UNITED STATES SIGNAL OFFICE.

The character of these determinations was misstated in "Lists of Elevations, 4th Edition," published in 1877. In nearly all cases these elevations were determined from railway levels and from levels from railway bench-marks. They were determined by barometer only in cases where exact methods could not be employed.

WALLEN.

"Explorations for a Wagon Road from the Dalles of the Columbia to Great Salt Lake, via Harney's Lake."

All determinations are barometric.

WATER-POWER OF MAINE.

Most of the heights were obtained by level.

WHEELER, CAPT. GEORGE M.

To this authority are credited all elevations determined by the United States Geographical Surveys West of the 100th Meridian.

Nearly all the work is barometric or trigonometric, depending upon barometric bases.

WHITNEY, PROF. J. D.

Under this authority are given elevations determined by the Geological Survey of the State of California, and the "Geological and Topographical Reconnaissance of the South Park, Colorado."

All heights are barometrically determined.

WILKES, CAPT. CHARLES.

"Voyage of Exploration to the Pacific."

WILLIAMSON.

Elevations are all barometrically determined.

ABBREVIATIONS OF NAMES OF RAILROADS, GIVEN AS AUTHORITIES.

Adir. R. R.....	Adirondack Railroad.
A. C. R. R.	Alabama Central Railroad.
A. & D. R. R.....	Adrian and Detroit Railroad.
A. & F. B. V. R. R.....	Atlantic and French Broad Valley Railroad.
Ala. G. S. R. R.	Alabama Great Southern Railroad.
A. & G. W. R. R.....	Atlantic and Great Western Railroad.
A., G. & W. I. T. R. R..	Atlantic, Gulf and West India Transit Railroad.
A. & L. R. R.....	Albany and Lebanon Railroad.
A., M. & O. R. R.....	Atlantic, Mississippi and Ohio Railroad.
A. & N. R. R.....	Atchison and Nebraska Railroad.
A. & N. C. R. R.....	Atlantic and North Carolina Railroad.
A. & P. R. R.....	Atlantic and Pacific Railroad.
Ash. & P. R. R.....	Ashtabula and Pittsburgh Railroad.
A. & R. A. L. R. R....	Atlanta and Richmond Air Line Railroad.
A. & S. R. R.....	Albany and Susquehanna Railroad.
A. & St. L. R. R.....	Atlantic and St. Lawrence Railroad.
A., T. & S. F. R. R....	Atchison, Topeka and Santa F6 Railroad.
A. V. R. R.....	Allegheny Valley Railroad.
A. & W. P. R. R.....	Atlantic and West Point Railroad.
B. R. R.....	Barclay Railroad.
B. & A. R. R.....	Brunswick and Albany Railroad.
Boston & Albany R. R.	Boston and Albany Railroad.
Bed. & Bridge. R. R...	Bedford and Bridgeport Railroad.
Bost., Con. & Mont. R. R.	Boston, Concord and Montreal Railroad.
B., C. & P. R. R.....	Buffalo, Corry and Pittsburgh Railroad.
B., C. R. & N. R. R....	Burlington, Cedar Rapids and Northern Railroad.
B. & E. R. R.....	Belleville and Eldorado Railroad.
B. E. Valley R. R.....	Bald Eagle Valley Railroad.
B. G. R. R.....	Bell's Gap Railroad.
B. & H. R. R.....	Baltimore and Hanover Railroad.
B. & M. R. R. R.....	Burlington and Missouri River Railroad.
B. & N. R. R.	Burlington and Northwestern Railroad.
Bost. & N. Y. R. R....	Boston and New York Railroad.
B., N. Y. & P. R. R....	Boston, New York and Philadelphia Railroad.
B. & O. R. R.....	Baltimore and Ohio Railroad.
B. & P. R. R.....	Baltimore and Potomac Railroad.
Bost. & Prov. R. R....	Boston and Providence Railroad.
B., P. & C. R. R.....	Baltimore, Pittsburgh and Chicago Railroad.
B. & S. R. R.....	Burlington and Southwestern Railroad.
B. & S. Ill. R. R.....	Belleville and Southern Illinois Railroad.
B. & S. S. R. R....	Bellefont and Snow Shoe Railroad.
B. & S. W. R. R.....	Bellaire and South Western Railroad.
Buff. & S. W. R. R. ...	Buffalo and South Western Railroad.
R. V. R. R.....	Buffalo Valley Railroad.
Cent. R. R.....	Central Railroad (Ga.).
Chat. R. R.....	Chateaugay Railroad.

- Camden & A. R. R. Camden and Amboy Railroad.
 C. & A. R. R. Chicago and Alton Railroad.
 C. B. & Q. R. R. Chicago, Burlington and Quincy Railroad.
 C. C. R. R. Colorado Central Railroad.
 Car. C. R. R. Carolina Central Railroad.
 Charlotte, C. & A. R. R. Charlotte, Columbia and Augusta Railroad.
 Corning, C. & A. R. R. Corning, Cowanesque and Antrim Railroad.
 C., C., C. & I. R. R. Cleveland, Columbus, Cincinnati and Indianapolis Railroad.
 C. C. & De R. R. R. Cazenovia, Canastota and De Ruyter Railroad.
 C. D. & C. G. T. J. R. R. Chicago, Detroit and Canada Grand Trunk Junction Railroad.
 C. & E. Ill. R. R. Chicago and Eastern Illinois Railroad.
 C. & F. R. R. Catsasqua and Fogsleville Railroad.
 C. F. & M. R. R. Cedar Falls and Minnesota Railroad.
 C. & G. R. R. Columbia and Greenville Railroad.
 C. G. & S. L. R. R. Cape Girardeau and State Line Railroad.
 C. & G. T. R. R. Chicago and Grand Trunk Railroad.
 C. H. & D. R. R. Cincinnati, Hamilton and Dayton Railroad.
 C. & H. V. R. R. Columbus and Hocking Valley Railroad.
 Cent. Iowa R. R. Central Iowa Railroad.
 C. & I. R. R. Chicago and Iowa Railroad.
 C., I., St. L. & C. R. R. Cincinnati, Indianapolis, Saint Louis and Chicago Railroad.
 C. & L. N. G. R. R. Chester and Lenoir Narrow Gauge Railroad.
 C. & M. L. S. R. R. Chicago and Michigan Lake Shore Railroad.
 C. M. & St. P. R. R. Chicago, Milwaukee and Saint Paul Railroad.
 C., Mt. V. & D. R. R. Cleveland, Mount Vernon and Delaware Railroad.
 C. N. E. R. Cincinnati Northern Railroad.
 C. & N. W. R. R. Chicago and North Western Railroad.
 C. N. O. & T. P. R. R. Cincinnati, New Orleans and Texas Pacific Railroad.
 C. & O. R. R. Chesapeake and Ohio Railroad.
 Cal. P. R. R. California Pacific Railroad.
 C. P. R. R. Central Pacific Railroad.
 Cin. & P. R. R. Cincinnati and Portsmouth Railroad.
 Conn. & Pass. R. R. Connecticut and Passumpsic Railroad.
 Cleve. & P. R. R. Cleveland and Pittsburgh Railroad.
 C. & P. D. R. R. Columbia and Port Deposit Railroad.
 C. & R. R. R. Columbus and Rome Railroad.
 Conn. River R. R. Connecticut River Railroad.
 C. R. & Ft. W. R. R. Cincinnati, Richmond and Fort Wayne Railroad.
 C., R. I. & P. R. R. Chicago, Rock Island and Pacific Railroad.
 C. S. R. R. Cincinnati Southern Railroad.
 C. & S. R. R. Cayuga and Susquehanna Railroad.
 C. & St. L. R. R. Cairo and Saint Louis Railroad.
 C., St. P., M. & O. R. R. Chicago, Saint Paul, Minneapolis and Omaha Railroad.
 C., T. V. & W. R. R. Cleveland, Tuscarawas Valley and Wheeling Railroad.
 C. & V. R. R. Cairo and Vincennes Railroad.
 Cent. Vt. R. R. Central Vermont Railroad.
 Conn. Western R. R. Connecticut Western Railroad.
 C. & W. R. R. Catawissa and Williamsport Railroad.
 C., W. & M. R. R. Cincinnati, Wabash and Michigan Railroad.
 C. & Z. R. R. Cincinnati and Zanesville Railroad.
 D. R. R. Delaware Railroad.
 D., A. V. & P. R. R. Dunkirk, Allegheny Valley and Pittsburgh Railroad.
 D. & B. C. R. R. Detroit and Bay City Railroad.
 D. & B. V. R. R. Denver and Boulder Valley Railroad.
 D. & D. E. R. Dorchester and Delaware Railroad.

D., G., H. & M. R. R.	Detroit, Grand Haven and Milwaukee Railroad.
D., H. & W. R. R.	Danville, Hazelton and Western Railroad.
D., L. & N. R. R.	Detroit, Lansing and Northern Railroad.
Del., L. & W. R. R.	Delaware, Lackawanna and Western Railroad.
D. M. & Ft. D. R. R.	Des Moines and Fort Dodge Railroad.
D., M. & M. R. R.	Detroit, Mackinac and Marquette Railroad.
D. M. & N. W. R. R.	Des Moines and North Western Railroad.
D. P. R. R.	Denver Pacific Railroad.
D. & R. Canal.	Delaware and Raritan Canal.
D. & R. G. R. R.	Denver and Rio Grande Railroad.
D. R. V. R. R.	Duck River Valley Railroad.
D. & S. E. R. R.	Dayton and South Eastern Railroad.
D. & S. P. R. R.	Denver and South Park Railroad.
D. & St. P. R. R.	Davenport and Saint Paul Railroad.
D. & S. W. R. R.	Danville and South Western Railroad.
E. A. L. R. R.	Elberton Air Line Railroad.
E. Broadtop R. R.	East Broadtop Railroad.
E. B. & W. R. R.	East Brandywine and Waynesburg Railroad.
E. & C. R. R.	Ebensburg and Cresson Railroad.
E., H. & N. R. R.	Evansville, Henderson and Nashville Railroad.
E. L., & B. S. R. R.	Elizabethtown, Lexington and Big Sandy Railroad.
E. L. & R. R. R. R.	East Line and Red River Railroad.
E. M. R. R.	East Mahanoy Railroad.
European & N. A. R. R.	European and North American Railroad.
E. Pa. R. R.	East Pennsylvania Railroad.
E. & P. R. R.	Erie and Pittsburgh Railroad.
Eureka & P. R. R.	Eureka and Palisade Railroad.
Eel R. R. R.	Eel River Railroad.
E. S. R. R.	Eastern Shore Railroad.
E. & T. H. R. R.	Evansville and Terre Haute Railroad.
E., T. H. & C. R. R.	Evansville, Terre Haute and Chicago Railroad.
E. T., V. & G. R. R.	East Tennessee, Virginia and Georgia Railroad.
Ft. D. & Ft. R. R. R.	Fort Dodge and Fort Ridgeley Railroad.
F., J. & G. R. R.	Fonda, Johnstown and Gloversville Railroad.
F. & N. Y. R. R.	Freehold and New York Railroad.
F., O. & C. R. R.	Fredericksburg, Orange and Charlottesville Railroad.
Ft. M. & N. W. R. R.	Fort Madison and North Western Railroad.
Ft. S., S. E. & M. R. R.	Fort Scott, South Eastern and Memphis Railroad.
Ft. W., J. & S. R. R.	Fort Wayne, Jackson and Saginaw Railroad.
Ga. R. R.	Georgia Railroad.
G. B. R. R.	Green Bay Railroad.
G., B. & C. R. R.	Golden, Boulder and Caribon Railroad.
G. B. & Minn. R. R.	Green Bay and Minnesota Railroad.
G., C. & S. F. R. R.	Gulf, Colorado and Santa Fé Railroad.
G., H. & S. A. R. R.	Galveston, Harrisburg and San Antonio Railroad.
G., I. & S. R. R.	Geneva, Ithaca and Sayre Railroad.
G., L. & S. J. R. R.	Georgetown, Leadville and San Juan Railroad.
G. & Ind. R. R.	Grand Rapids and Indiana Railroad.
G. R. V. R. R.	Grand River Valley Railroad.
G. & S. P. R. R.	Golden and South Platte Railroad.
G., W. T. & P. R. R.	Gulf, Western Texas and Pacific Railroad.
H. & B. T. R. R.	Huntington and Broad Top Railroad.
H. & C. M. R. R.	Hannibal and Central Missouri Railroad.
H. & N. R. R.	Hannibal and Naples Railroad.
H., P. & F. R. R.	Hartford, Providence and Fishkill Railroad.

H. & St. J. R. R.	Hannibal and Saint Joseph Railroad.
H. & T. C. R. R.	Houston and Texas Central Railroad.
I., B. & W. R. R.	Indiana, Bloomington and Western Railroad.
Ill. Cent. R. R.	Illinois Central Railroad.
I., D. & S. R. R.	Indianapolis, Decatur and Springfield Railroad.
I. & G. N. R. R.	International and Great Northern Railroad.
Inda. & La F. R. R.	Indianapolis and La Fayette Railroad.
Ill. & St. L. R. R.	Illinois and Saint Louis Railroad.
Inda. & V. R. R.	Indianapolis and Vincennes Railroad.
J. & B. R. R.	Junction and Breakwater Railroad.
J. C. & Ft. K. R. R.	Junction City and Fort Kearney Railroad.
J., L. & S. R. R.	Jackson, Lansing and Saginaw Railroad.
J., M. & I. R. R.	Jeffersonville, Madison and Indianapolis Railroad.
J. & N. Ind. R. R.	Joliet and Northern Indiana Railroad.
J. R. & K. Canal	James River and Kanawha Canal.
J. S. E. R. R.	Jacksonville South Eastern Railroad.
J. S., P. C. & B. R. R.	Jersey Shore, Pine Creek and Buffalo Railroad.
K. C. R. R.	Kansas Central Railroad.
K. C., Ft. S. & G. R. R.	Kansas City, Fort Scott and Gulf Railroad.
K. C., L. & S. R. R.	Kansas City, Lawrence and Southern Railroad.
K. C., St. J. & C. B. R. R.	Kansas City, Saint Joseph and Council Bluffs Railroad.
K. & N. W. R. R.	Keokuk and North Western Railroad.
K. P. R. R.	Kansas Pacific Railroad.
K. & S. H. R. R.	Kalamazoo and South Haven Railroad.
K. U. R. R.	Kentucky Union Railroad.
L. R. R.	Lackawanna Railroad.
L. & A. R. R.	Lowell and Andover Railroad.
L. A. & I. R. R.	Los Angeles and Independent Railroad.
L. B. R. R.	Lawrenceville Branch Railroad.
L., C. & L. R. R.	Louisville, Cincinnati and Lexington Railroad.
L. C. & S. C. R. R.	Lewisburg Center and Spruce Creek Railroad.
L. E. & W. R. R.	Lake Erie and Western Railroad.
L. & L. R. R.	Lehigh and Lackawanna Railroad.
L. & M. R. R. R.	Louisville and Missouri River Railroad.
L., N. A. & C. R. R.	Louisville, New Albany and Chicago Railroad.
L., N., S. & N. A. R. R.	Louisville, Nashville, South and North Alabama Railroad.
L. & Q. R. R.	Lancaster and Quarryville Railroad.
L. R. & Ft. S. R. R.	Little Rock and Fort Smith Railroad.
L. R. V. & Ark. R. R.	Little River Valley and Arkansas Railroad.
L. & S. R. R.	Lehigh and Susquehanna Railroad.
L. Schuyl. R. R.	Little Schuylkill Railroad.
L. S. & M. R. R. R.	Lake Superior and Mississippi River Railroad.
L. S. & M. S. R. R.	Lake Shore and Michigan Southern Railroad.
L. & S. V. R. R.	Longview and Sabine Valley Railroad.
L. & S. W. R. R.	Lawrence and South Western Railroad.
L. & T. R. R.	Lebanon and Tremont Railroad.
M. R. R.	Montrose Railroad.
Mt. A. R. R.	Mont Alto Railroad.
M. & A. G. T. R. R.	Mobile and Alabama Grand Trunk Railroad.
M. & B. R. R.	Macon and Brunswick Railroad.
Me. Cent. R. R.	Maine Central Railroad.
Mass. Cent. R. R.	Massachusetts Central Railroad.
Mich. A. L. R. R.	Michigan Air Line Railroad.
Mich. Cent. R. R.	Michigan Central Railroad.
Mill C. R. R.	Mill Creek Railroad.

Muncy C. R. R.	Muncy Creek Railroad.
Memphis & C. R. R.	Memphis and Charleston Railroad.
M. & C. R. R.	Marietta and Cincinnati Railroad.
M. & C. Co. R. R.	Mifflin and Center County Railroad.
M. C. & S. B. R. R.	Mauch Chuuk and Switch Back Railroad.
M. C. & T. R. R.	Mississippi Central and Tennessee Railroad.
M. & D. R. R.	Mechanicsburg and Dillsburg Railroad.
M. & E. R. R.	Montgomery and Eufaula Railroad.
M. & G. R. R.	Millville and Glassboro' Railroad.
M., H. & O. R. R.	Marquette, Houghton and Ontonagon Railroad.
M. H. & S. H. R. R.	Mine Hill and Schuylkill Haven Railroad.
M. & I. Canal.	Michigan and Illinois Canal.
Mo., Iowa & Neb. R. R.	Missouri, Iowa and Nebraska Railroad.
McK. & B. R. R.	McKean and Buffalo Railroad.
M., K. & C. R. R.	Memphis, Kansas and Colorado Railroad.
Mo., Kans. & Tex. R. R.	Missouri, Kansas and Texas Railroad.
M., K. & T. E. R. R.	Missouri, Kansas and Texas Extension Railroad.
Man. & Lawrence R. R.	Manchester and Lawrence Railroad.
M. & L. R. R. R.	Memphis and Little Rock Railroad.
M., L. S. & W. R. R.	Milwaukee, Lake Shore and Western Railroad.
Morgan's L. & T. R. R.	Morgan's Louisiana and Texas Railroad.
Minn. Mid. R. R.	Minnesota Midland Railroad.
M. & M. R. R.	Mobile and Montgomery Railroad.
Mil. & N. R. R. R.	Milwaukee and Northern Railroad.
M. & N. G. R. R.	Marietta and North Georgia Railroad.
Man. & N. Weare R. R.	Manchester and North Weare Railroad.
M. & N. W. R. R.	Mobile and North Western Railroad.
M. & O. R. R.	Mobile and Ohio Railroad.
M. & P. R. R.	Marietta and Pittsburgh Railroad.
M. R. R. R.	Mineral Range Railroad.
M. & S. R. R.	Mahanoy and Shamokin Railroad.
M. & St. L. R. R.	Minneapolis and Saint Louis Railroad.
M. & W. R. R.	Macon and Western Railroad.
M. & W. R. R. R.	Montpelier and Wells River Railroad.
N. Carolina R. R.	North Carolina Railroad.
N. C. R. R.	Northern Central Railroad.
N. C. & B. V. R. R.	New Castle and Beaver Valley Railroad.
N. C. & F. R. R.	New Castle and Franklin Railroad.
Nev. Co. N. G. R. R.	Nevada County Narrow Gauge Railroad.
N. D. & C. R. R.	Newburgh, Dutchess and Connecticut Railroad.
N. E. R. R.	North Eastern Railroad.
N. E. Pa. R. R.	North East Pennsylvania Railroad.
N. H. & Northam. R. R.	New Haven and Northampton Railroad.
N. J. C. R. R.	New Jersey Central Railroad.
N. M. & S. P. R. R.	New Mexico and Southern Pacific Railroad.
N. & N. R. R.	Nashville and Northwestern Railroad.
N. O. M. & T. R. R.	New Orleans, Mobile and Texas Railroad.
N. O. & N. E. R. R.	New Orleans and North Eastern Railroad.
N. P. R. R.	Northern Pacific Railroad.
N. Pa. R. R.	North Pennsylvania Railroad.
N. Valley R. R.	Nesquehoning Valley Railroad.
N. & W. R. R.	Norfolk and Western Railroad.
N. W. N. C. R. R.	North Western North Carolina Railroad.
N. W. U. R. R.	North Western Union Railroad.
N. Y., B. & M. R. E.	New York, Boston and Montreal Railroad.

N. Y. C. & H. R. R. R.	New York Central and Hudson River Railroad.
N. Y. C. & N. R. R.	New York City and Northern Railroad.
N. Y. & H. R. R.	New York and Harlem Railroad.
N. Y., K. & S. R. R.	New York, Kingston and Syracuse Railroad.
N. Y., L. E. & W. R. R.	New York, Lake Erie and Western Railroad.
N. Y. & N. H. R. R.	New York and New Haven Railroad.
N. Y., N. H. & Htfd. R. R.	New York, New Haven and Hartford Railroad.
N. Y. & O. M. R. R.	New York and Oswego Midland Railroad.
N. Y., Prov. & Bost. R. R.	New York, Providence and Boston Railroad.
N. Y., Pa. & O. R. R.	New York, Pennsylvania and Ohio Railroad.
N. Y., R. & P. R. R.	New York, Ridgeway and Petersburg Railroad.
O. & E. Canal	Ohio and Erie Canal.
O. & M. R. R.	Ohio and Mississippi Railroad.
O., N. & B. H. R. R.	Omaha, Niobrara and Black Hills Railroad.
O. & R. V. R. R.	Omaha and Republican Valley Railroad.
Oreg. R. R. & Nav. Co.	Oregon Railroad and Navigation Company.
O. & R. R. R.	Oswego and Rome Railroad.
Oregon & Cal. R. R.	Oregon and California Railroad.
O. & S. R. R.	Oswego and Syracuse Railroad.
P. R. R.	Perkiomen Railroad.
Pa. R. R.	Pennsylvania Railroad.
Peters. R. R.	Petersburgh Railroad.
P. A. L. R. R.	Piedmont Air Line Railroad.
P. B. R. R.	Peach Bottom Railroad.
P. & B. C. R. R.	Philadelphia and Baltimore Central Railroad.
P. & C. R. R.	Pittsburgh and Connellsville Railroad.
P., C. & St. L. R. R.	Pittsburgh, Cincinnati and St. Louis Railroad.
P. & D. R. R.	Passaic and Delaware Railroad.
Pa. & Del. R. R.	Pennsylvania and Delaware Railroad.
P., D. & E. R. R.	Peoria, Decatur and Evansville Railroad.
P. & E. R. R.	Philadelphia and Erie Railroad.
Paducah & E. R. R.	Paducah and Elizabethtown Railroad.
P., Ft. W. & C. R. R.	Pittsburgh, Fort Wayne and Chicago Railroad.
P., G. F. & C. R. R.	Portsmouth, Great Falls and Conway Railroad.
P., H. & B. R. R.	Poughkeepsie, Hartford and Boston Railroad.
P. H. & N. W. R. R.	Port Huron and Northwestern Railroad.
P. & K. C. R. R.	Parker and Kansas City Railroad.
P., K. & P. R. R.	Plymouth, Kankakee and Pacific Railroad.
Port. & Ogden. R. R.	Portland and Ogdensburg Railroad.
Phil. & N. R. R.	Philadelphia and Newtown Railroad.
P. & P. R. R.	Pennsylvania and Petroleum Railroad.
P., P. & J. R. R.	Peoria, Pekin and Jacksonville Railroad.
P. R. R. R.	Port Royal Railroad.
Phil. & R. R. R.	Philadelphia and Reading Railroad.
P. & R. I. R. R.	Peoria and Rock Island Railroad.
Prov. & Spring. R. R.	Providence and Springfield Railroad.
Phil. & T. R. R.	Philadelphia and Trenton Railroad.
P., T. & B. R. R.	Pittsburgh, Titusville and Buffalo Railroad.
P., V. & C. R. R.	Pittsburgh, Virginia and Charleston Railroad.
Prov. & Worces. R. R.	Providence and Worcester Railroad.
P., W. & B. R. R.	Philadelphia, Wilmington and Baltimore Railroad.
Prov., Warren & Bris- tol R. R.	Providence, Warren and Bristol Railroad.
R. & A. R. R.	Richmond and Alleghany Railroad.
R. & A. A. L. R. R.	Raleigh and Augusta Air Line Railroad.

R. & C. R. R.	Reading and Columbia Railroad.
Rome & C. R. R.	Rome and Clinton Railroad.
R. & D. R. R.	Richmond and Danville Railroad.
R., F. & P. R. R.	Richmond, Fredericksburgh and Potomac Railroad.
R. G. R. R.	Rio Grande Railroad.
R. & G. R. R.	Raleigh and Gaston Railroad.
R. H. R. R.	Rich Hill Railroad.
R., N. & P. R. R.	Rochester, Nunda and Pennsylvania Railroad.
R. & P. R. R.	Richmond and Petersburg Railroad.
R. & S. L. R. R.	Rochester and State Line Railroad.
R. & S. R. R.	Rensselaer and Saratoga Railroad.
R. V. & B. & C. R. R.	Republican Valley and Burlington and Colorado Railroad.
R., W. & O. R. R.	Rome, Watertown and Ogdensburgh Railroad.
R., Y. R. & C. R. R.	Richmond, York River and Chesapeake Railroad.
S. R. R.	Salisbury Railroad.
S. & A. R. R.	Shenango and Allegheny Railroad.
Spring, Athol & North- ern R. R.	Springfield, Athol and Northern Railroad.
S. B. R. R.	Summit Branch Railroad.
S. & B. R. R.	Syracuse and Binghamton Railroad.
S. C. R. R.	Southern Central Railroad.
S. Carolina R. R.	South Carolina Railroad.
S. & C. R. R.	Savannah and Charleston Railroad.
S. C. & D. R. R.	Sioux City and Dakota Railroad.
S. C. & J. R. R.	Short Creek and Joplin Railroad.
S. C. & P. R. R.	Sioux City and Pacific Railroad.
S. & C. V. R. R.	Syracuse and Chenango Valley Railroad.
S., G. & C. R. R.	Syracuse, Geneva and Corning Railroad.
St. J. & D. C. R. R.	Saint Joseph and Denver City Railroad.
S. K. & W. R. R.	Southern Kansas and Western Railroad.
S. & L. R. R.	Sunbury and Lewiston Railroad.
St. L., I. Mt. & S. R. R.	Saint Louis, Iron Mountain and Southern Railroad.
St. L., K. C. & N. R. R.	Saint Louis, Kansas City and Northern Railroad.
S. L. & S. R. R.	State Line and Sullivan Railroad.
St. L. & S. E. R. R.	Saint Louis and South Eastern Railroad.
St. L. & S. F. R. R.	Saint Louis and San Francisco Railroad.
St. L., S. & L. R. R. R.	Saint Louis, Salem and Little Rock Railroad.
St. L., V. & T. H. R. R.	Saint Louis, Vandalia and Terre Haute Railroad.
S. & M. R. R.	Savannah and Memphis Railroad.
S. & M. P. R. R.	Somerset and Mineral Point Railroad.
S. & N. B. R. R.	Selinsgrove and North Branch Railroad.
S. P. R. R.	Southern Pacific Railroad.
S. & P. R. R.	Sacramento and Placerville Railroad.
St. P. & P. R. R.	Saint Paul and Pacific Railroad.
St. P. & S. C. R. R.	Saint Paul and Sioux City Railroad.
S. P., S., & T. F. R. R.	Saint Paul, Stillwater and Taylor's Falls Railroad.
S., R. & D. R. R.	Selma, Rome and Dalton Railroad.
S. & R. R. R.	Seaboard and Roanoke Railroad.
S. & S. R. R.	Schuykill and Susquehanna Railroad.
S. & S. W. R. R.	Salina and South Western Railroad.
S. W. R. R.	South Western Railroad.
S. W. Pa. R. R.	South West Pennsylvania Railroad.
T. C. R. R.	Texas Central Railroad.
T. & C. R. R.	Tyrone and Clearfield Railroad.
T., E. & S. L. R. R.	Tioga, Elmira and State Line Railroad.

T. H. & Inds. R. R	Terre Haute and Indianapolis Railroad.
T. H. & S. R. R.	Terre Haute and Southeastern Railroad.
T. & N. O. R. R	Texas and New Orleans Railroad.
T. & P. R. R	Texas and Pacific Railroad.
T. P. & W. R. R.	Toledo, Peoria and Warsaw Railroad.
T. W. & W. R. R	Toledo, Wabash and Western Railroad.
U. & B. R. R. R	Utica and Black River Railroad.
U. C. R. R	Utah Central Railroad.
U., C. & B. R. R.	Utica, Clinton and Binghamton Railroad.
U., C. & S. R. R.	Utica, Chenango and Susquehanna Valley Railroad.
U. & D. R. R.	Ulster and Delaware Railroad.
U., I. & E. R. R.	Utica, Ithaca and Elmira Railroad.
U. & N. R. R.	Utah and Northern Railroad.
U. & N. F. R. R	Ursina and North Fork Railroad.
U. P. R. R	Union Pacific Railroad.
U. S. R. R.	Utah Southern Railroad.
U. & T. R. R.	Union and Titusville Railroad.
U. T. Co. R. R.	Union Transit Company Railroad.
U. W. R. R.	Utah Western Railroad.
V. R. R	Valley Railroad.
Vt. & Mass. R. R	Vermont and Massachusetts Railroad.
V., M., T. & G. R. R	Vermont, Massachusetts, Troy and Greenfield Railroad.
V. & N. R. R	Vicksburg and Nashville Railroad.
Vt. Valley R. R	Vermont Valley Railroad.
W. R. R.	Western Railroad (Ala.).
W. & A. R. R	Western and Atlantic Railroad.
W. C. R. R	West Chester Railroad.
Wis. Cent. R. R	Wisconsin Central Railroad.
W. C. & P. R. R	West Chester and Philadelphia Railroad.
W. C., Va. M. & G. S. R. R	Washington City, Virginia Midland and Great Southern Railroad.
W. & E. R. R.	Williamsport and Elmira Railroad.
W. & E. Canal.	Wabash and Erie Canal.
W. J. R. R.	West Jersey Railroad.
W. N. C. R. R	Western North Carolina Railroad.
W. Md. R. R	Western Maryland Railroad.
W. & O. R. R.	Washington and Ohio Railroad.
W. & O. & O. C. R. R.	Western and Oregon, and Oregon Central Railroad.
W. Pa. R. R	West Pennsylvania Railroad.
W. & R. R. R.	Wilmington and Reading Railroad.
W., St. L. & P. R. R	Wabash, Saint Louis and Pacific Railroad.
W. V. R. R.	Walkill Valley Railroad.
Wis. Val. R. R	Wisconsin Valley Railroad.
Warwick V. R. R.	Warwick Valley Railroad.
W. Va. C. & P. R. R	West Virginia Central and Pittsburgh Railroad.
W. & W. R. R.	Wilmington and Western Railroad.
Yough. R. R	Youghiogheny Railroad.
Y. Br. Pa. R.	York Branch Pennsylvania Railroad.

ALABAMA.

Station.	Authority.	Elevation.
		<i>Feet.</i>
nder City	Ala. G. S. R. R.	149
	S. & M. R. R.	742
	S. R. & D. R. R.	470
son	S. R. & D. R. R.	702
	S. R. & D. R. R.	456
	Ala. G. S. R. R.	602
s	L. N. S. & N. A. R. R.	707
r	L. N. S. & N. A. R. R.	466
y	S. R. & D. R. R.	509
l	Memphis & C. R. R.	498
ville	M. & E. R. R.	280
s	Ala. G. S. R. R.	152
r Meadow	M. & O. R. R.	136
onte	Memphis & C. R. R.	639
iew	A. C. R. R.	160
fills	S. R. & D. R. R.	446
gham	Ala. G. S. R. R.	596
t Springs	L. N. S. & N. A. R. R.	432
fountain	S. R. & D. R. R.	791
o	Ala. G. S. R. R.	123
	L. N. S. & N. A. R. R.	522
on	Ala. G. S. R. R.	896
eld	S. R. & D. R. R.	388
	L. N. S. & N. A. R. R.	562
aboro'	Memphis & C. R. R.	631
's Cut	Ala. G. S. R. R.	244
ville	S. R. & D. R. R.	182
amines	L. N. S. & N. A. R. R.	598
	L. N. S. & N. A. R. R.	500
t	M. & A. G. T. R. R.	57
Hill	S. & M. R. R.	733
l	M. & A. G. T. R. R.	54
age	Ala. G. S. R. R.	176
ville, west bank Cahaba, opp	M. & A. G. R. R.	252
w	W. R. R., of Ala	252
ng	M. & A. G. T. R. R.	43
rsburgh	S. R. & D. R. R.	416
villa	M. & O. R. R.	78
elle	M. & O. R. R.	317
on	L. N. S. & N. A. R. R.	594
	S. R. & D. R. R.	193
Creek	L. N. S. & N. A. R. R.	538
nts	Ala. G. S. R. R.	419
and	M. & A. G. T. R. R.	15
la	L. N. S. & N. A. R. R.	183
'reek	M. & A. G. T. R. R.	34
sville	Ala. G. S. R. R.	738
biana	S. R. & D. R. R.	535
bus	W. R. R.	262
rs	L. N. S. & N. A. R. R.	456
Station	S. R. & D. R. R.	447
dale	Ala. G. S. R. R.	273
aud	Memphis & C. R. R.	560
	S. R. & D. R. R.	373
	M. & A. G. T. R. R.	23
Plains	S. R. & D. R. R.	697
	Ala. G. S. R. R.	219
an	L. N. S. & N. A. R. R.	697

Station.	Authority.	Elevation.
		<i>Feet.</i>
Cunningham	L. N. S. & N. A. R. R.	438
Currys	S. R. & D. R. R.	540
Dadeville	S. & M. R. R.	755
Deatsville	L. N. S. & N. A. R. R.	298
Decatur	L. N. S. & N. A. R. R.	575
Deer Park	M. & O. R. R.	148
Dickson	Memphis & C. R. R.	493
Dixie	S. R. & D. R. R.	268
Elkmont	L. N. S. & N. A. R. R.	798
Elmore	L. N. S. & N. A. R. R.	197
Epes	Ala. G. S. R. R.	129
Eufaula	M. & E. R. R.	200
Eureka	Ala. G. S. R. R.	979
Eutaw	Ala. G. S. R. R.	189
Falkville	L. N. S. & N. A. R. R.	601
Fitzpatrick's	M. & E. R. R.	262
Flint	L. N. S. & N. A. R. R.	566
Foots	L. N. S. & N. A. R. R.	646
Fort Deposit	M. & M. R. R.	589
Fort Payne	Ala. G. S. R. R.	833
Gardners'	S. R. & D. R. R.	542
Gilmer	L. N. S. & N. A. R. R.	538
Gold Hill	S. & M. R. R.	705
Goldaby	A. C. R. R.	183
Goodwater	S. & M. R. R.	867
Greenpond	Ala. G. S. R. R.	491
Greenwood	Ala. G. S. R. R.	691
Griffiths' Mills	S. R. & D. R. R.	691
Hampden	M. & A. G. T. R. R.	180
Harpersville	Ala. G. S. R. R.	186
Harrall's Cross-roads	A. C. R. R.	192
Harris	L. N. S. & N. A. R. R.	592
Hartsell's	L. N. S. & N. A. R. R.	671
Hays Mills	L. N. S. & N. A. R. R.	751
Helena	L. N. S. & N. A. R. R.	398
Holliman	Ala. G. S. R. R.	937
Hulls	Ala. G. S. R. R.	141
Huntsville	Memphis & C. R. R.	612
Ironton	L. N. S. & N. A. R. M.	650
Jackson	M. C. & T. R. R.	459
Jackson's Gap	S. & M. R. R.	690
Jacksonville	S. R. & D. R. R.	628
Jamison	L. N. S. & N. A. R. R.	704
Jonesboro'	Ala. G. S. R. R.	527
Jones Station	A. C. R. R.	209
Kellyton	S. & M. R. R.	800
Kymulga	S. R. & D. R. R.	426
Ladiga	S. R. & D. R. R.	671
Larkinsville	Memphis & C. R. R.	620
Lary's	L. N. S. & N. A. R. R.	160
Leighton	Memphis & C. R. R.	563
Leona	M. & A. G. T. R. R.	54
Livingston	Ala. G. S. R. R.	144
Logan	A. C. R. R.	134
Lomax	L. N. S. & N. A. R. R.	623
McCalla	Ala. G. S. R. R.	485
McDonald	L. N. S. & N. A. R. R.	683
Madison	Memphis & C. R. R.	573
Maplesville	S. R. & D. R. R.	366
Marion	M. & A. G. T. R. R.	253
Matthews	M. & E. R. R.	262
Maxwell	Ala. G. S. R. R.	176
Midway	M. & E. R. R.	506

Station.	Authority.	Elevation.
		<i>Feet.</i>
.....	L. N. S. & N. A. R. R.	838
ation	A. C. R. R.	119
l	M. & E. R. R.	252
.....	M. & O. R. R.	6
Signal Station	U. S. Signal Office	60
allo	S. R. & D. R. R.	469
.....	L. N. S. & N. A. R. R.	162
.....	U. S. Signal Office	219
Signal Station	L. N. S. & N. A. R. R.	406
.....	L. N. S. & N. A. R. R.	540
in Creek	M. & A. G. T. R. R.	49
Vernon	S. R. & D. R. R.	621
l	M. & A. G. T. R. R.	330
ount, tunnel at grade	M. & A. G. T. R. R.	449
..... summit of mount	M. & E. R. R.	226
ve	Ala. G. S. R. R.	288
d	W. R. R., of Ala.	812
.....	S. R. & D. R. R.	653
.....	S. R. & D. R. R.	639
.....	S. R. & D. R. R.	213
.....	L. N. S. & N. A. R. R.	425
la Junction	M. & M. R. R.	68
.....	L. N. S. & N. A. R. R.	790
ad	M. & E. R. R.	296
sville	S. R. & D. R. R.	241
.....	M. & A. G. T. R. R.	37
.....	M. & M. R. R.	67
h	S. R. & D. R. R.	548
.....	Ala. G. S. R. R.	599
.....	L. N. S. & N. A. R. R.	591
ro'	Memphis & C. R. R.	652
.....	W. R. R.	122
e. bank Alabama River	A. C. R. R.	110
unction, Western R. R.	A. C. R. R.	108
ossing, S. R. & D. R. R.	A. C. R. R.	112
spot, Broad street	A. C. R. R.	122
ossing, N. O. & S. R. R.	A. C. R. R.	121
.....	M. & M. R. R.	200
Creek	L. N. S. & N. A. R. R.	610
Springs	S. R. & D. R. R.	529
.....	L. N. S. & N. A. R. R.	462
tun	S. R. & D. R. R.	630
.....	M. & A. G. T. R. R.	54
ood's	Ala. G. S. R. R.	429
Hill	M. & E. R. R.	312
ille	Ala. G. S. R. R.	727
ord	Ala. G. S. R. R.	574
.....	Ala. G. S. R. R.	610
on	Memphis & C. R. R.	602
's	Ala. G. S. R. R.	159
ant	S. & M. R. R.	497
er	M. & A. G. T. R. R.	28
Mills	S. R. & D. R. R.	741
za	S. R. & D. R. R.	561
ill	Ala. G. S. R. R.	485
.....	A. C. R. R.	173
.....	M. & M. R. R.	8
on's	M. & E. R. R.	289
otch Road	M. & E. R. R.	492
reek	Memphis & C. R. R.	560
.....	M. & C. R. R.	634
Je	Ala. G. S. R. R.	702
sea	Ala. G. S. R. R.	181

Station.	Authority.	Elevation.
		<i>Feet.</i>
Tusculum	Memphis & C. R. R.	488
Union Springs (M. & G. R. R. crossing)	M. & E. R. R.	494
Uniontown (Ala. Cen. R. R. crossing)	M. & A. G. T. R. R.	274
Do Depot	A. C. R. R.	282
Valley Head	Ala. G. S. R. R.	1,031
Vance's	Ala. G. S. R. R.	514
Verbena	L. N. S. & N. A. R. R.	448
Veto	S. R. & D. R. R.	160
Warrior	L. N. S. & N. A. R. R.	547
Waverly	S. & M. R. R.	805
West Point	W. R. R. of Ala.	417
Wetumpka	L. N. S. & N. A. R. R.	183
Whistler	M. & O. R. R.	41
Whiting	L. N. S. & N. A. R. R.	553
Whitney	Ala. G. S. R. R.	613
Wilhite	L. N. S. & N. A. R. R.	606
Williams' Cross-Roads	Ala. G. S. R. R.	514
Wilsonville	S. R. & D. R. R.	427
Woodstock	Ala. G. S. R. R.	519
Woodville	Memphis & C. R. R.	596
York	Ala. G. S. R. R.	159

ALASKA.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Adakh	U. S. C. & G. S.	5,678
Akutan	U. S. C. & G. S.	3,888
Atka	U. S. C. & G. S.	4,988
Avatanak	U. S. C. & G. S.	1,207
Bogosloff	U. S. C. & G. S.	844
Bouldys, Peak of	U. S. C. & G. S.	1,145
Chuqul	U. S. C. & G. S.	3,109
Cook, Mt.	Dall	16,000
Crillon, Mt.	Dall	15,900
Devastation, Mt.	U. S. C. & G. S.	5,525
Edgecombe, Mt.	U. S. C. & G. S.	2,855
Fairweather, Mt.	Malespina	14,589
Do	Tebenkoff	14,000
Do	Vasilieff	13,946
Do	Russian hydro. chart	14,708
Do	English Admiralty chart	14,708
Do	Tebenkoff, chart iii	13,864
Do	Dall	15,500
Gareloi	U. S. C. & G. S.	5,334
Garyalaya	U. S. C. & G. S.	11,270
Illiaminsk	U. S. C. & G. S.	12,066
Kyska, North Peak	U. S. C. & G. S.	4,025
Macushin	U. S. C. & G. S.	5,961
St. Elias, Mt.	Malespina	17,854
Do	Tebenkoff	16,938
Do	La Perouse	12,661
Do	English hydro. chart	14,970
Do	Russian hydro. chart	17,854
Do	Dall	19,500
Shishaldin	U. S. C. & G. S.	8,683
Sitka, Signal Station	U. S. Signal Office	63
Tanaga	U. S. C. & G. S.	7,108
Unalaska	U. S. C. & G. S.	5,961
Unimak	U. S. C. & G. S.	8,954
Verstoca	U. S. C. & G. S.	3,374
Vsevidoff	U. S. C. & G. S.	8,868

ARIZONA.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Acorn Spring	Powell	6,360
Adonde	S. P. R. R. of Ariz	214
Agua Prieta		4,017
Allentown	A. & P. R. R.	6,026
Angell	A. & P. R. R.	5,879
Antelope Springs	Wheeler	8,065
Anvil Rock	Wheeler	5,354
Apache Camp	Wheeler	5,000
" Signal Station	U. S. Signal Office	5,004
Apache Spring	Wheeler	6,124
Arch Spring	Toner	6,350
Ash Fork	A. & P. R. R.	5,105
Aspen Spring		7,381
Aubrey	A. & P. R. R.	5,128
Aubrey Cliffs	Powell	7,330
Aubrey Valley	Toner	5,156
Beale	A. & P. R. R.	3,472
Beale's Pass	R. P. R. R. surveys	2,127
Bear Springs		4,264
Bellemonte	A. & P. R. R.	7,099
Benson	S. P. R. R.	3,580
Benson Junction	A. T. & S. F. R.	3,521
Big Cañon		1,426
Billings	A. & P. R. R.	5,372
Bill Williams Mt	Ives	6,620
Bitter Spring	Powell	4,890
Bitter Spring Peak	Powell	6,700
Blue Spring	Wheeler	7,796
Bowers' Ranch	Wheeler	4,412
Bowie	S. P. R. R.	3,761
Bowie, Camp	Wheeler	4,672
Brookline	A. T. & S. F. R. R.	4,462
Buchanan, Fort	Med. Dpt. U. S. A.	5,330
Bush's Ranch	Wheeler	7,704
Cactus	S. P. R. R.	4,224
Canby, Fort	Med. Dept., U. S. A.	6,500
Canister	A. T. & S. F. R. R.	3,618
Cañon Springs	Wheeler	5,498
Cariso, Mt	Hayden	9,280
Carrizo	A. & P. R. R.	5,199
Casa Grande	S. P. R. R. of Ariz	1,398
Cave Spring	Wheeler	6,031
Cedar Forest		5,868
Chalender	A. & P. R. R.	6,837
Chino	A. & P. R. R.	5,224
Chloride	Wheeler	4,201
Cienega	Wheeler	7,476
Cienega De San Simon	Wheeler	3,855
Colorado Chiquito Bridge	Wheeler	5,638
Colorado Plateau	Powell	6,000 to 8,000
Cooley's Ranch	Wheeler	5,367
Contention	A. T. & S. F. R. R.	3,771
Cosnino	A. & P. R. R.	6,434
Cosnino Caves	Wheeler	6,244
"	Pacific R. R. Reports	6,139
Cottonwood Spring	Wheeler	4,170
Coyote Spring	Wheeler	6,874

Station.	Authority.	Elevation.
		<i>Fect.</i>
Criswell's Ranch	Wheeler.....	5,772
Crittenden	A. T. & S. F. R. R.	4,172
Crookton	A. & P. R. R.	5,657
Cross Mt.	Petermann	5,182
Crown Point	Powell	7,140
Date Creek, Camp	Toner	3,726
Deer Spring	Wheeler	5,981
Defiance, Fort	U. S. Geol. Survey	6,862
Demotte Park	Powell	5,800-6,000
Dennison	A. & P. R. R.	4,979
Desert Station	Wheeler	2,135
Desert Tanks	Wheeler	5,192
Diablo Cañon	Toner	4,765
Duffer Crag	Powell	6,500
Echo Peak	Powell	5,360
Elgin	A. T. & S. F. R. R.	4,690
El Puerto del Dado Pass	Petermann	5,433
Escudilla Mountain	Wheeler	10,691
Estrella	S. P. R. R. of Ariz.	1,523
Fairbank Junction	A. T. & S. F. R. R.	3,828
Fairview	A. & P. R. R.	5,909
Flagstaff	A. P. R. R.	6,862
Florence, Signal Station	U. S. Signal Office	1,553
Gila City	S. P. R. R. of Ariz.	175
Gila Bend	S. P. R. R. of Ariz.	739
Gnome Waterpocket (Wainupits Pikavu) ..	Powell	5,390
Goodwin, Camp (old)	Wheeler	2,816
Graham Mountain	Wheeler	10,516
Grant, Camp	Wheeler	4,833
Grant, Old Camp	Wheeler	2,118
Grant, Signal Station	U. S. Signal Office	4,737
Green's Peak	Wheeler	10,093
Hackberry	A. & P. R. R.	3,522
Ha-pa-ka-va'-te Spring	Powell	6,840
Hardy	A. & P. R. R.	4,910
Hart's Ranch	Powell	8,970
Hatch Wells	Powell	5,290
Holbrook	A. & P. R. R.	5,047
Hope, Mt.	Peterson	6,321
House Rock Spring	Powell	5,730
Huachuca	A. T. & S. F. R. R.	4,253
Hualapai	A. & P. R. R.	3,277
Hualapais, Camp	Wheeler	5,322
Hualapais Spring	Wheeler	4,258
Humphreys' Peak	Wheeler	12,562
Jacob's Pool Point	Powell	6,890
Jacob's Pools	Powell	5,260
Jacob's Well	Pacific R. R. Reports	5,973
Do	Wheeler	6,065
Jaycock's Ranch	Wheeler	6,814
Kaibab Plateau	Wheeler	8,000
Kanab Plateau	Powell	5,000-6,400
Kane Spring	Powell	3,686
Kerlin's Well	Powell	5,502
Kingman	A. & P. R. R.	3,303
Kisaha Waterpocket	Powell	5,980
La Pilla	Wheeler	5,850
Law's Spring	Powell	6,870
Lee's Ferry	Powell	3,170
Leronx Springs	Pacific R. R. Reports	7,378
Limestone Spring	Wheeler	5,680
Limestone Tanks	Powell	5,040
Limestone Water-pocket	Wheeler	5,405
Little Colorado River (mouth of)	Powell	2,880

Station.	Authority.	Elevation.
		<i>Feet.</i>
Lockwood Spring	Wheeler	5,526
Los Lente	Wheeler	6,542
Los Nogales .....	.....	3,836
Lowell, Camp	Wheeler	2,000
McPherson, Camp	Med. Dept., U. S. A.	3,726
Maricopa	S. P. R. R. of Ariz.	1,188
Maricopa Wells	Pacific R. R. Reports	1,270
Mescal	S. P. R. R.	4,036
Mineral Spring	Wheeler	6,670
Mi-shong-i-ni-vi (base of)	Powell	5,558
Moa Ava	Powell	4,705
Moencopie	Powell	4,710
Mohawk Summit	S. P. R. R. of Ariz.	543
Moicava Settlement	Powell	4,700
Mojave, Camp	Wheeler	755
Do	Med. Dept., U. S. A.	604
Do	Pacific R. R. Reports	605
Mogollon Mesa	Wheeler	7,535
Mooshaneh	Ives	5,890
Mountain Spring .....	.....	5,500
Do	Powell	3,198
Muska Lake	Powell	5,380
Muska Mt	Powell	6,580
Navajo Mt	Powell	10,038
Navajo Springs	A. & P. R. R.	5,005
Do	Powell	4,155
Do	Wheeler	4,101
Do	Wheeler	5,666
Do	Pacific R. R. Reports	5,026
Navajo Spring	Powell	5,800
Nelson Tanks	Wheeler	6,216
New Year's Spring	Ives	6,739
Nogales	A. T. & S. F. R. R.	3,813
Nugent's Pass	K. P. R. R. surveys	4,686
Do	T. & P. R. R. surveys	4,820
Oak Spring	Powell	6,359
Octoa	S. P. R. R.	4,104
Ojo de San Luis .....	.....	5,044
Oraibi Peak	Powell	6,700
Oraibi Spring	Powell	5,950
Oraibi	Wheeler	4,757
Do	Powell	6,009
Do	Ives	5,816
Do Garden	Ives	6,395
Ord Peak	Wheeler	10,266
Oval Butte	Powell	5,410
Pahghun-pahghun Springs .....	.....	2,282
Painted Cañon, entrance	Wheeler	746
Painted Rock	S. P. R. R. of Ariz.	728
Palo Verde	A. & P. R. R.	1,065
Pantano	S. P. R. R. of Ariz.	3,538
Papago	S. P. R. R. of Ariz.	3,012
Parapet Plateau	Powell	4,000-7,000
Paria Plateau (eastern edge)	Powell	7,276
Do	Powell	6,000-7,300
Paria Spring	Wheeler	6,896
Park Spring	Toner	7,199
Peach Orchard Spring	Wheeler	6,272
Peach Spring	A. & P. R. R.	4,759
Peach-tree Spring	Powell	4,110
Peacock Spring	Toner	3,174
Pearl Spring	Toner	5,315
Phenix, Signal Station	U. S. Signal Office	1,068

Station.	Authority.	Elevation.
		<i>Feet.</i>
any Spring	Powell	3,690
io	S. P. R. R. of Ariz.	1,618
o	Wheeler	1,750
io Peak	Petermann	4,754
io Spring .....	.....	4,870
Post	Wheeler	2,669
Villages .....	.....	1,440
'anks	Wheeler	5,648
reta	A. & P. R. R.	5,084
pring	Powell	4,890
pring Point	Powell	6,560
prings	Wheeler	5,397
de los Pimas	Toner	4,149
og Spring	Powell	4,500
y Hill	Ives	5,722
.....	A. & P. R. R.	418
tt	Wheeler	5,316
Crossing	Wheeler	5,332
Colorado	Wheeler	6,401
Viega	Wheeler	2,712
as Cañon	Mexican Boundary Survey ..	4,170
l Butte	Powell	6,720
ad Pass	Ives	3,764
.....	K. P. R. R. surveys	4,356
.....	T. & P. R. R.	4,490
ad Pass Station	S. P. R. R.	4,396
as, Camp (old)	Wheeler	4,666
tte	Powell	7,690
esa	Powell	5,510
ck	S. P. R. R. of Ariz.	1,867
Springs	Wheeler	5,526
.....	S. P. R. R. of Ariz.	2,060
pring	Wheeler	6,849
pring, Fort .....	.....	4,972
Pass	K. P. R. R. surveys	4,312
l Point	Powell	7,280
l's Tank	Toner	5,225
on .....	.....	1,066
nento	A. & P. R. R.	2,587
l	Wheeler	2,711
John's	Wheeler	5,650
Joseph	A. & P. R. R.	4,979
pring	Wheeler	4,747
urlos Agency	Wheeler	2,456
s	A. & P. R. R.	5,607
d's	A. T. & S. F. R. R.	3,728
ancisco, Mt.	P. R. R. Reports	12,052
.....	Wheeler	12,562
..... (edge of crater) ..	Wheeler	10,122
..... (timber line)	Wheeler	11,468
ancisco Spring	Pacific R. R. Reports	6,666
mon	S. P. R. R. Reports	3,611
el	S. P. R. R. of Ariz.	690
ts Plateau .....	.....	7,000
.....	Powell	5,800-6,200
o-pah-we	Wheeler	6,032
mavi	Powell	6,070
Blanca, (timber line on) ..	.....	11,100
Peak	Wheeler	9,330
Spring	Wheeler	6,169
ves Pass	Ives	3,652
alley, Camp	Med. Dept., U. S. A.	5,000
.....	A. T. & S. F. R. R.	4,824

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Station.	Authority.	Elevation.
		<i>Feet.</i>
Spears' Ranch.....	Wheeler.....	681
Springerville.....	Wheeler.....	6,862
Stanwix.....	S. P. R. R. of Ariz.....	587
Steven's Ranch.....	Powell.....	4,650
Summit Spring.....	Wheeler.....	7,867
Sunset Crossing.....	Wheeler.....	4,891
Sunset Gap.....	Wheeler.....	5,755
Sunset Tanks.....	Wheeler.....	5,797
Supai.....	A. & P. R. R.....	6,917
Sweet Water.....	S. P. R. R. of Ariz.....	1,298
Taylor, Mt.....	Wheeler.....	11,200
Tegua.....	Powell.....	6,035
Do.....	Wheeler.....	6,239
Terra.....	Powell.....	6,070
Texas Hill.....	S. P. R. R. of Ariz.....	355
Thomas Peak.....	Wheeler.....	11,496
Thompson's Spring.....	Powell.....	4,980
Thousand Wells.....	Powell.....	5,399
Tipton Mesa.....	Powell.....	6,680
Tipton Peak.....	Wheeler.....	7,364
Tonto Pass.....	A. & P. R. R. surveys.....	7,539
Toroweap Valley.....	Powell.....	4,550
Trident Point.....	Powell.....	6,760
Trumbull, Mt.....	Powell.....	8,360
Truxton.....	A. & P. R. R.....	4,172
Truxton Springs.....	Wheeler.....	3,685
Tubac.....	Toner.....	3,000
Tucson.....	S. P. R. R. of Ariz.....	2,392
Do.....	Wheeler.....	2,538
Do. Signal Station.....	U. S. Signal Office.....	2,404
Tull Spring.....	Wheeler.....	5,861
Uinkaret Plateau.....	Powell.....	5,400-6,100
Union Pass.....	Wheeler.....	3,600
Val de Chino.....	Pacific R. R. Reports.....	5,754
Verde, Camp.....	Wheeler.....	3,160
Vigil's Ranch.....	Wheeler.....	5,875
Volunteer Spring.....	Wheeler.....	7,106
Wag-a-thi-lo Spring.....	Powell.....	6,040
Wallipi Pass.....	K. P. R. R. surveys.....	3,473
Walpi.....	Powell.....	6,070
Washington Pass.....	Wheeler.....	8,825
Washi-pahghum Springs.....	.....	4,421
Whipple, Fort.....	Wheeler.....	5,318
Do.....	Pacific R. R. Reports.....	5,335
Whipple Pass.....	K. P. R. R. surveys.....	7,206
White Rock Spring.....	Wheeler.....	6,301
White's Ranch.....	.....	1,202
Whitlock's Cienega.....	Wheeler.....	3,580
Willecox.....	S. P. R. R.....	4,166
Williams.....	A. & P. R. R.....	6,727
Williams' Ranch.....	Wheeler.....	7,487
Willow Grove.....	.....	4,170
Willow Spring.....	Wheeler.....	7,294
Winslow.....	A. & P. R. R.....	4,825
Wonsit's Plain.....	Powell.....	4,500-5,000
Yampai.....	A. & P. R. R.....	5,552
Yampa Junction.....	.....	5,369
Yucca.....	A. & P. R. R.....	1,774
Yuma.....	S. P. R. R.....	142
Do. Signal Station.....	U. S. Signal Office.....	141

ARKANSAS.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Alexander.....	St. L., I. Mt. & S. R. R.....	330
Alicia.....	Toner.....	244
Alma.....	L. R. & Ft. S. R. R.....	477
Altus.....	L. R. & Ft. S. R. R.....	581
Argenta.....	M. & L. R. R. R.....	201
Arkadelphia.....	St. L., I. Mt. & S. R. R.....	191
Atkins.....	L. R. & Ft. S. R. R.....	399
Austin.....	St. L., I. Mt. & S. R. R.....	258
Baring Cross.....	Toner.....	246
Beebe.....	St. L., I. Mt. & S. R. R.....	250
Benton.....	St. L., I. Mt. & S. R. R.....	283
Bentonville.....	Smithsonian Inst.....	1,790
Bradford.....	St. L., I. Mt. & S. R. R.....	246
Brinkley.....	M. & L. R. R. R.....	200
Buckhorn.....	Smithsonian Inst.....	650
Cabin Creek.....	L. R. & Ft. S. R. R.....	449
Cabot.....	Toner.....	279
Camden.....	Toner.....	123
Campbell.....	Toner.....	223
Carrollton.....	Toner.....	1,412
Clarksville.....	L. R. & Ft. S. R. R.....	409
Coal Hill.....	L. R. & Ft. S. R. R.....	510
Conway.....	L. R. & Ft. S. R. R.....	361
Corning.....	St. L., I. Mt. & S. R. R.....	294
Delaplaine.....	Toner.....	268
Devall's Bluff.....	M. & L. R. R. R.....	181
Fayetteville.....	Toner.....	1,350
Flippen's Barrens.....	Smithsonian Inst.....	1,000
Forrest City.....	M. & L. R. R. R.....	281
Fort Smith.....	L. R. & Ft. S. R. R.....	467
Fulton, Red River Bridge.....	St. L., I. Mt. & S. R. R.....	272
Gaines' Landing.....	Toner.....	149
Gainesville.....	Toner.....	500
Garner.....	Toner.....	211
Gatlin.....	L. R. & Ft. S. R. R.....	451
Germantown.....	L. R. & Ft. S. R. R.....	353
Grand Glaize.....	St. L., I. Mt. & S. R. R.....	226
Gurdon.....	St. L., I. Mt. & S. R. R.....	213
Higginson.....	Toner.....	210
Holland.....	Toner.....	243
Hope.....	St. L., I. Mt. & S. R. R.....	357
Hopefield, opp. Memphis.....	M. & L. R. R. R.....	218
Do.....extreme h. w. in Mississippi Riv.....		217
Horsehead.....	L. R. & Ft. S. R. R.....	404
Hot Springs.....	Toner.....	718
Jacksonport.....	Toner.....	214
Jacksonville.....	St. L., I. Mt. & S. R. R.....	267
Jamison.....	L. R. & Ft. S. R. R.....	330
Jndsonia.....	St. L., I. Mt. & S. R. R.....	222
Kennett.....	St. L., I. Mt. & S. R. R.....	229
Kuobel.....	Toner.....	271
Knoxville.....	L. R. & Ft. S. R. R.....	437
La Anguille.....	M. & L. R. R. R.....	210
La Honda.....	Pacific R. R. Reports.....	632
Little Rock.....	St. L., I. Mt. & S. R. R.....	263
Do.....Signal Station.....	U. S. Signal Office.....	298
Lockhart's.....	Toner.....	242

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Station.	Authority.	Elevation.
		<i>Feet.</i>
London	L. R. & Ft. S. R. R.	406
McAlmont	Toner	263
McLean's Landing	Toner	360
Madison, on St. Francis Bridge.....	M. & L. R. R. R.	213
Do .. town proper .....	.....	207
Malvern	St. L., I. Mt. & S. R. R.	277
Mineral Spring	Toner	609
Minturn Spring	Toner	251
Moark	Toner	257
Montana	L. R. & Ft. S. R. R.	432
Morrilton	L. R. & Ft. S. R. R.	386
Mulberry	L. R. & Ft. S. R. R.	439
Murta	Toner	261
Napoleon	Pacific R. R. Reports	142
Nowport	St. L., I. Mt. & S. R. R.	232
O'Kean	St. L., I. Mt. & S. R. R.	276
Olyphant	Toner	215
Osita	L. R. & Ft. S. R. R.	366
Ozark	L. R. & Ft. S. R. R.	424
Palarm	L. R. & Ft. S. R. R.	268
Peach Orchard	St. L., I. Mt. & S. R. R.	290
Pittsburg	Toner	418
Plummersville	L. R. & Ft. S. R. R.	290
Prescott	St. L., I. Mt. & S. R. R.	328
Preston .....	.....	790
Rockport	Toner	264
Russellville	L. R. & Ft. S. R. R.	348
Smith, Fort	Med. Dept., U. S. A	460
Spadra	L. R. & Ft. S. R. R.	422
Spring Hill	Smithsonian Inst	186
Swifton	St. L., I. Mt. & S. R. R.	253
Texarkana	St. L., I. Mt. & S. R. R.	303
Do (June. T. & J. Div. T. & P.) ..	T. & P. R. R.	358
Van Buren	L. R. & Ft. S. R. R.	449
Do h. w. Arkansas River, 1866) ..	L. R. & Ft. S. R. R.	450
Do (l. w. Arkansas River, 1878) ..	L. R. & Ft. S. R. R.	423
Walnut Ridge	St. L., I. Mt. & S. R. R.	275
Ward	Toner	231
Warren	L. R. & Ft. S. R. R.	331
Washington	Smithsonian Inst	660
White Oak	L. R. & Ft. S. R. R.	435

CALIFORNIA.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Abbey Hill.....	U. S. C. & G. S.....	1,232
Abbott.....	U. S. C. & G. S.....	375
Acampo.....	.....	59
Adalante.....	Cal. P. R. R.....	76
Adams, Mt.....	Wheeler.....	8,431
Adobe.....	Wheeler.....	282
Adobe Meadows.....	Wheeler.....	6,594
Agua Caliente.....	Emory.....	3,013
Do.....	Wheeler.....	725
Do.....	Wheeler.....	3,617
Alamo Mocho.....	P. R. R. Reports.....	—70
Alcatraz Island.....	U. S. C. & G. S.....	143
Algodones.....	P. R. R. Reports.....	46
Alpine.....	C. P. R. R.....	2,822
Alta.....	C. P. R. R.....	3,607
Altamont.....	C. P. R. R.....	740
Alturas.....	Wheeler.....	4,365
Alturas Hill.....	Wheeler.....	4,459
Amy's Ranch.....	Wheeler.....	1,494
Anaheim.....	C. P. R. R.....	130
Anderson.....	Toner.....	33
Anderson, Mt.....	Whitney.....	9,000
Angel Island, N. W.....	U. S. C. & G. S.....	159
Angel Island Peak.....	U. S. C. & G. S.....	782
Aneta.....	Toner.....	161
Antelope.....	C. P. R. R.....	154
Antelope Ranch.....	Wheeler.....	359
Antelope Spring.....	Wheeler.....	4,272
Arab Spring.....	Wheeler.....	5,697
Arcade.....	C. P. R. R.....	55
Arlington Bridge.....	Wheeler.....	3,375
Ash Springs.....	Wheeler.....	1,810
Auburn.....	C. P. R. R.....	1,360
Do.....	Smithsonian Inst.....	1,176
Aurora.....	Wheeler.....	7,449
Advisadera, Point.....	U. S. C. & G. S.....	171
Azusa.....	Wheeler.....	594
Babbitt, Camp.....	Williamson.....	384
Bache, Mt.....	U. S. C. & G. S.....	3,793
Do.....	Petermann.....	3,790
Bacons' Ranch.....	Wheeler.....	4,076
Bagley's Ranch.....	Wheeler.....	5,387
Bah-li-vah Spring.....	Wheeler.....	6,284
Bakersfield.....	Wheeler.....	432
Baker's Ranch.....	Toner.....	3,285
Bald Mountain.....	Wheeler.....	5,829
Do.....	Wheeler.....	8,295
Bald Rock.....	Wheeler.....	7,825
Balley, Mt.....	Whitney.....	6,357
Ballona.....	L. A. & I. R. R.....	103
Bantas.....	C. P. R. R.....	30
Bardins.....	Monterey R. R.....	48
Bare Mountain.....	Wheeler.....	6,039
Bares' Ranch, Surprise Valley.....	Wheeler.....	4,690
Barker's Ranch.....	Wheeler.....	594
Barnard's Hotel.....	Wheeler.....	3,851
Batavia.....	C. P. R. R.....	64
Battle Creek Meadows.....	Wheeler.....	4,700

Station.	Authority.	Elevation.
		Feet.
Battle Hill.....	.....	2,329
Baxter's Station.....	Wheeler.....	4,116
Bear Valley P. O.....	Wheeler.....	2,657
Do..... Town Hotel.....	Wheeler.....	6,622
Beckworth's Pass.....	Wheeler.....	5,123
Do.....	R. R. surveys.....	4,622
Do.....	Whitney.....	5,327
Beckworth's Store.....	Wheeler.....	4,657
Bell Mill.....	Wheeler.....	3,651
Bello.....	Cal. P. R. R.....	303
Benicia Arsenal.....	U. S. C. & G. S.....	6
Benicia Barracks.....	Med. Dept., U. S. A.....	64
Bennett's Wells, Death Valley.....	Wheeler.....	—6
Berenda.....	Toner.....	255
Bidwell.....	Wheeler.....	4,642
Bidwell Camp.....	Wheeler.....	4,647
Do.....	Med. Dept., U. S. A.....	4,629
Bidwell, Mt.....	Wheeler.....	8,551
Bidwell's Bar, South Fork Feather River.....	Wheeler.....	343
Bielowski.....	Whitney.....	3,279
Bigge's.....	C. P. R. R.....	124
Big Logan.....	Toner.....	79
Big Meadow Ranch.....	Wheeler.....	6,464
Big Meadows.....	Wheeler.....	4,234
Big Oak Flat.....	Wheeler.....	2,823
Big Springs.....	Wheeler.....	4,553
Big Tree Grove, Calaveras County.....	Wheeler.....	4,794
Big Tree Station.....	Wheeler.....	3,625
Birds' Springs.....	Wheeler.....	3,949
Black Bluff.....	U. S. C. & G. S.....	308
Black Mountain.....	U. S. C. & G. S.....	2,311
Blackmore's Ranch.....	Wheeler.....	2,230
Black Ridge.....	U. S. C. & G. S.....	756
Black Springs.....	Wheeler.....	6,485
Blodgett's Ranch.....	Wheeler.....	216
Blood's Station.....	Wheeler.....	6,979
Blue Cañon.....	C. P. R. R.....	4,693
Bluff Point.....	U. S. C. & G. S.....	177
Board Ranch.....	Wheeler.....	4,639
Boca.....	Wheeler.....	5,230
Do.....	C. P. R. R.....	5,531
Bodega Head.....	U. S. C. & G. S.....	241
Bold's Ranch.....	Wheeler.....	141
Bonita, Point.....	U. S. C. & G. S.....	283
Boneyard Ranch.....	Wheeler.....	2,450
Boot-jack Ranch.....	Wheeler.....	2,107
Borden.....	Toner.....	172
Boston Peak.....	Wheeler.....	6,519
Bower Cave.....	Wheeler.....	2,360
Box Elder.....	.....	1,430
Boyd's Ranch.....	Wheeler.....	622
Bozeman's Ranch.....	Wheeler.....	3,157
Brandy City.....	.....	3,592
Breccia Pass.....	Goldard.....	10,150
Breckinridge, Mt.....	Wheeler.....	5,693
Breckenridge, Mt.....	Wheeler.....	7,418
Brewer, Mt.....	Whitney.....	13,886
Brewery.....	Wheeler.....	2,838
Bridgeport.....	Wheeler.....	1,357
Bridgeport P. O.....	Wheeler.....	6,423
Brighton.....	S. & P. R. R.....	42
Brighton, Cross S. V. R. R.....	C. P. R. R.....	54
Broncho.....	Wheeler.....	5,310

Station.	Authority.	Elevation.
		<i>Feet.</i>
vn's Flat	Wheeler.....	1,964
vn's Peak	Wheeler.....	5,392
vn's Ranch	Wheeler.....	1,759
keye	Wheeler.....	4,938
khorn Ranch (or Warren Station).....	Wheeler.....	693
k's Ranch	Wheeler.....	5,112
na Vista	Wheeler.....	323
Do	Nev. Co. N. G. R. R	2,618
na Vista Oil Works .....	.....	790
alo Station.....	Wheeler.....	4,378
ows, Mt.	Wheeler.....	4,267
st Rock	Wheeler.....	9,157
st Hill	U. S. C. & G. S	422
o Creek Bridge	Wheeler.....	4,692
o Creek House	Wheeler.....	5,758
st, Mt.	Wheeler.....	7,830
ies' Ferry	Wheeler.....	380
7, Camp	Wheeler.....	1,894
to	Smithsonian Inst	2,000
enga Pass	Wheeler.....	750
n Pass	Pacific R. R. Reports	4,676
n Pass Divide	Wheeler.....	4,115
n Ranch	Pacific R. R. Reports	412
veras Grove	Wheeler.....	4,730
ente	C. P. R. R	1,200
Do	Wheeler.....	1,314
ente Springs	Wheeler.....	3,688
ornia City Point.....	U. S. C. & G. S	75
toga	C. P. R. R	331
o, Signal Station.....	U. S. Signal Office	2,527
stonville	Toner	2,398
Weldon (Mountain)	Wheeler.....	2,716
ake Ranch	Wheeler.....	3,904
las Ranch	Wheeler.....	799
n	C. P. R. R	90
de Turrucó Pass .....	.....	4,256
Spring	Wheeler.....	1,238
Station	Wheeler.....	2,650
Grande	Pacific R. R. Reports	730
Ranch	Wheeler.....	7,790
Spring	Wheeler.....	5,512
ale	C. P. R. R	222
Bridge, North Fork	Wheeler.....	2,843
It .....	.....	431
It	Whitney	4,977
Hot Springs	U. S. C. & G. S	4,415
ion Toll-house	Wheeler.....	6,237
ss	Wheeler.....	6,596
.....	Goddard	7,972
.....	Whitney	8,759
.....	Wheeler.....	8,634
.....	.....	3,589
on Owens Lake	Wheeler.....	3,589
.....	Wheeler.....	9,970
.....	C. P. R. R	6,538
.....	Wheeler.....	9,013
.....	Whitney	12,500
.....	Wheeler.....	9,872
on line of S. P. R. R	Monterey R. R	19
.....	S. P. R. R	512
ok (lower)	Wheeler.....	6,430
ok (higher)	Wheeler.....	6,599
sh	Wheeler.....	1,900

Station.	Authority.	Elevation.
		<i>Feet.</i>
Cavallos, Point de los.....	U. S. C. & G. S.....	196
Coyote Ridge.....	U. S. C. & G. S.....	1,664
Cedar, Mt.....	Wheeler.....	8,898
Cedar Point.....	Toner.....	5,614
Cedarville.....	Wheeler.....	4,675
Centerville.....	Wheeler.....	893
Cerro Gordo Landing, Col. River.....	Wheeler.....	3,456
Cerro Gordo Pass.....	Wheeler.....	8,874
Chapman's Ranch.....	Wheeler.....	4,998
Chapperal House.....	Wheeler.....	5,076
Chemehuevis Pass.....	K. P. R. R. surveys.....	676
Chico.....	C. P. R. R.....	193
Do.....	Smithsonian Inst.....	180
Do.....	Wheeler.....	177
Chinese Camp.....	Wheeler.....	1,229
Chiquita Peak.....	Wheeler.....	8,136
Chuckawalla.....	Wheeler.....	9,085
Cicero.....	C. P. R. R.....	90
Cienega.....	L. A. & I. R. R.....	121
Cisco.....	C. P. R. R.....	5,864
Cisco (site) South Fork Yuba River.....	Wheeler.....	5,654
Clark Peak.....	Wheeler.....	11,226
Clark's.....	Wheeler.....	3,965
Clark's Ranch.....	Wheeler.....	4,677
Clayton.....	Smithsonian Inst.....	78
Clear Lake.....	Wheeler.....	5,608
Clipper Gap.....	C. P. R. R.....	1,769
Cloud Rest.....	Wheeler.....	9,772
Clover Valley.....	Wheeler.....	3,464
Cohen's Ranch.....	Wheeler.....	261
Cahuilla Village.....	Pacific R. R. Reports.....	85
Colby's Ranch.....	Wheeler.....	4,990
Cold Spring.....	Wheeler.....	3,126
Do.....	Wheeler.....	5,375
Cold Spring Ranch.....	Wheeler.....	565
Cole's Ranch.....	Wheeler.....	1,221
Coleville (blacksmith shop).....	Wheeler.....	5,190
Colfax.....	Nev. Co. N. G. R. R.....	2,422
Do.....	Wheeler.....	3,022
Colfax Junction, with Nevada Co. R. R.....	C. P. R. R.....	2,422
Colona.....		635
Colton.....	Wheeler.....	808
Do.....	C. P. R. R.....	965
Columbia.....	Toner.....	2,314
Columbia P. O.....	Wheeler.....	2,157
Columbia Rock (above valley).....	Wheeler.....	5,005
Conejos.....	Wheeler.....	2,565
Conejos Ranch.....	Wheeler.....	579
Conness Peak.....	Wheeler.....	12,518
Contra Costa.....	U. S. C. & G. S.....	96
Cook's Point (Mountain).....	Wheeler.....	6,336
Cook's Wells.....	Pacific R. R. Reports.....	—62
Coomb's Station.....	Wheeler.....	2,886
Cooper's Ranch.....	Wheeler.....	8,406
Copperopolis P. O.....	Wheeler.....	1,015
Corbett's Ranch.....	Wheeler.....	1,075
Corcoran, Mt.....	Wheeler.....	14,093
Cordelia.....	C. P. R. R.....	11
Do.....	Pacific R. R. Reports.....	69
Cory's Peak.....	Wheeler.....	11,326
Costa.....	C. P. R. R.....	65
Cottonwood.....	Toner.....	423
Cottonwood Island.....	Wheeler.....	787

Station.	Authority.	Elevation.
		<i>Feet.</i>
Cottonwood Station	Wheeler.....	2,488
Coulterville	Wheeler.....	1,685
Cow Creek Ranch, Sonora Road	Wheeler.....	5,905
Cow Head Lake	Wheeler.....	6,041
Cow Head Lake Spring	Wheeler.....	5,329
Cow Spring	Wheeler.....	3,876
Cox's Ferry	Wheeler.....	250
Crabtrees	Wheeler.....	934
Crane Flat	Wheeler.....	6,054
Crane Valley	Wheeler.....	3,185
Crater Station .....	.....	1,000
Crescent City	Smithsonian Inst	12
Do	Wheeler.....	3,306
Cress's Ranch	Wheeler.....	5,157
Creston	C. P. R. R.	313
Crimea House	Wheeler.....	1,221
Crook, Fort	Med. Dept. U. S. A	3,390
Crow's Ranch, Clover Valley	Wheeler.....	5,464
Crystal Lake	R. R. Reports	5,907
Culbertson's	Wheeler.....	980
Culbertson's Vineyard	Wheeler.....	991
Cucamonga	C. P. R. R.	952
Do	Wheeler.....	1,328
Cucamonga Peak	Wheeler.....	8,529
Cucamonga Ranch	Wheeler.....	1,168
Cuddy's Ranch	Wheeler.....	5,278
Cunningham's Ranch	Wheeler.....	387
Curtis	C. P. R. R.	39
Daggett's Pass	Goddard.....	6,824
Dahlonaga	Wheeler.....	2,162
Dalton's Ranch	Wheeler.....	568
Dana, Mt	Whitney	13,227
Darwin Cañon	Wheeler.....	3,143
Davis	C. P. R. R.	54
Daves Ranch	Wheeler.....	451
Deadfall Bridge	Wheeler.....	3,426
Deadwood Peak	Wheeler.....	4,451
Decoto	C. P. R. R.	68
Deep Spring	Wheeler.....	4,957
Deer Creek	Wheeler.....	4,518
Delaney's Ranch	Wheeler.....	4,840
Delano	C. P. R. R.	313
Desert Springs	Wheeler.....	1,989
Dewar's Station	Wheeler.....	2,922
Devil's Peak	Wheeler.....	6,910
Diablo Point	U. S. C. & G. S	202
Diablo, Monte, Hotel	U. S. C. & G. S	2,327
Diablo, Monte	U. S. C. & G. S	3,849
Dixon	C. P. R. R.	65
Donner Lake	R. R. Reports	5,964
Do	Wheeler.....	5,885
Donner Pass	C. P. R. R. Surveys	7,901
Do	Whitney	7,056
Doon's Saw Mill	Wheeler.....	3,420
Dos Palmas	Wheeler.....	103
Downey	C. P. R. R.	114
Downieville	Smithsonian Inst	2,200
Downieville Buttes	Whitney	8,400
Do	Wheeler.....	8,541
Drew's Ranch	Wheeler.....	1,090
Dribblesby's Ferry	Pacific R. R. Reports	954
Drume Barracks	Med. Dept., U. S. A	38
Dudley's	Wheeler.....	2,939

Station.	Authority.	Elevation.
		<i>Feet.</i>
Duxbury	U. S. C. & G. S.	797
Dugan's	S. & P. R. R.	1, 106
Dunderberg Peak	Wheeler	12, 229
Dutch Flat	C. P. R. R.	3, 395
Dutch Henry's Ranch	Wheeler	1, 195
Dutch Hill Mining Camp	Wheeler	4, 692
Dyer Mountain, near Big Meadows	Wheeler	7, 369
Eagle Lake	Wheeler	5, 115
Eagle Mountain	Wheeler	9, 933
Eagleville	Wheeler	4, 632
Ebbitt's Pass	P. R. R. Reports	8, 793
Echo Peak	Wheeler	11, 231
Edgar's Spring	Wheeler	4, 061
Eisen Vineyard	Wheeler	358
Eldorado Mill	Wheeler	863
Elephant, Mt.	Wheeler	10, 418
Eleven Mile Station, Mariposa Road	Wheeler	5, 567
Eliot's Ranch, on Little Truckee River	Wheeler	6, 233
Elizabeth Lake	Wheeler	3, 317
Elk Grove	C. P. R. R.	53
Elk Horn	Pacific R. R. Reports	89
Elkhorn Ranch	Wheeler	1, 049
Elk Valley		3, 751
Ellis	C. P. R. R.	76
Ellis Mountain	Wheeler	8, 675
Elmira	C. P. R. R.	75
El Monte	Wheeler	329
El Paso Mines	Wheeler	4, 113
Emigrants' Gap	C. P. R. R.	5, 221
Do	Pacific R. R. Reports	5, 221
Eureka		5, 223
Eureka Valley	Wheeler	5, 957
Excelsior Hotel	Wheeler	4, 570
Fandango Peak	Wheeler	7, 849
Far West, Camp	Med. Dept., U. S. A.	175
Fears' Station	Wheeler	3, 393
Ferguson's Mill	Wheeler	1, 389
Fifteen Mile Creek	Wheeler	1, 267
Fisherman's Peak	Wheeler	14, 448
Fish-pond Station	Toner	1, 900
Florence	C. P. R. R.	153
Florin	Toner	42
Folsom	S. & P. R. R.	182
Forest Ranch	Wheeler	2, 217
Forgay's Ranch	Wheeler	3, 381
Fornis' Ranch	Wheeler	4, 225
Forsee's Ranch	Wheeler	3, 587
Fort Point	U. S. C. & G. S.	186
"Forty-nine," Cañon Pass	Wheeler	6, 306
Foster's Bar	Toner	1, 371
Foster's Station	Wheeler	3, 265
Fowler's Peak	Wheeler	1, 760
Francis' Spring	Wheeler	4, 220
Frank's Lagoon	U. S. C. & G. S.	497
Fredonyer's Peak	Wheeler	7, 995
Freels' Mountain	Wheeler	10, 848
Fremont	C. P. R. R.	58
Frenchman's Cove	Wheeler	5, 565
Fresno	C. P. R. R.	294
Do	Wheeler	314
Fresno Flat	Wheeler	2, 192
Fryes'	Wheeler	2, 181
Fulsom & Hall's Ranch	Wheeler	4, 222

Station.	Authority.	Elevation.
		<i>Feet.</i>
Furnace Creek	Wheeler	405
Furnace Springs	Wheeler	337
Galt Junction	C. P. R. R.	49
Gavilan	U. S. C. & G. S.	2,816
Do	Whitney	3,381
Georgetown	Toner	2,433
Georgetown Pass	Whitney	7,119
Do	C. P. R. R. Surveys	7,154
Gilroy	Toner	193
Glenville	Wheeler	3,094
Gold Run	C. P. R. R.	3,220
Gold Spring Ranch	Wheeler	2,014
Goodrich's Ranch	Wheeler	4,883
Goose Lake	Wheeler	4,697
Gordon's Ranch	Wheeler	737
Gorman's Ranch	Wheeler	3,838
Goshen	C. P. R. R.	278
Goshen Junction, with S. P. R. R.	C. P. R. R.	290
Guaño Island	U. S. C. & G. S.	28
Granite Spring	Wheeler	1,435
Granite Springs	Wheeler	4,115
Granite Station	Wheeler	1,744
Granite Wells	Wheeler	2,080
Grape Vine Peak	Wheeler	8,528
Grape Vine Ranch	Wheeler	2,247
Grape Vine Spring	Wheeler	2,432
Grass Lake	Wheeler	8,564
Grass Valley		2,090
Do	Nev. Co. N. G. R. R.	2,454
Gravel Range	Wheeler	2,987
Gray's Ranch	Wheeler	307
Do	Wheeler	1,100
Green Bluff	U. S. C. & G. S.	486
Green Mountain	Wheeler	1,351
Do	Wheeler	1,352
Green's Ranch	Wheeler	4,479
Greenville	Wheeler	3,544
Gridley	Toner	97
Griffith's Ranch	Wheeler	473
Grizzly Giant, Mariposa Grove	Wheeler	5,838
Grizzly Hill	Wheeler (Theod)	5,709
Grizzly Peak	Wheeler	11,723
Do	Wheeler	10,369
Groveland	Wheeler	2,828
Gyser's	Wheeler	5,864
Haighs'	Wheeler	1,807
Hale's	Wheeler	2,739
Halfway house	Wheeler	3,359
Halloran Spring	Wheeler	3,272
Hamilton Mountain	Whitney	4,440
Hamilton (near)	Pacific R. R. Reports	260
Hardin's	Wheeler	3,396
Harkness Mountain, near Big Meadows	Wheeler (Theod)	8,875
Harris' Ranch, Madeline Plains	Wheeler	5,339
Harris' Station, Amander Road	Wheeler	5,439
Hart's Ranch	Wheeler	242
Haskell's Peak	Wheeler	8,126
Hat Mountain	Wheeler	7,676
Haughtown Crossing	S. & P. R. R.	85
Havilah Town	Wheeler	3,150
Hays' Station	Wheeler	5,957
Hasel Green	Wheeler	5,550
Haselton Peak	Wheeler	2,980

Station.	Authority.	Elevation.
		<i>Feet.</i>
Hazel Valley	Wheeler	3,404
Helena, Mount	Whitney	4,343
Hennessey Pass	C. P. R. R. Surveys	7,031
Do	Whitney	6,926
Hennessey's Bridge	Wheeler	1,621
Henry, Mount	Whitney	2,398
Hermit Valley	Wheeler	7,039
Hickman's Ranch	Wheeler	1,907
High Bluff	U. S. C. & G. S.	533
High Hill	U. S. C. & G. S.	490
Highland Peak	Wheeler	10,956
Hill's Ranch	Pacific R. R. Reports	4,131
Hite's Cove	Wheeler	1,601
Hodgdon's	Wheeler	4,506
Hoffmann Peak	Wheeler	10,672
Hogle	C. P. R. R.	76
Holliester	Toner	924
Homestead	S. & P. R. R.	33
Honey Lake	Wheeler	3,949
Hooker .....	.....	543
Hope Valley	Williamson	7,072
Hornitos Hotel	Wheeler	847
Horn Spring	Wheeler	5,477
Horsley's Station	Wheeler	3,860
Hoselkus' Ranch	Wheeler	3,635
Hotchkiss Ranch	Wheeler	2,931
Hot Springs	Wheeler	6,060
Do	Wheeler	7,384
Do	Wheeler	7,692
Hough's Mountain	Wheeler (Theod)	7,391
Hovely's Camp	Wheeler	3,860
Hubertville	Toner	980
Hughes' Ranch	Wheeler	3,122
Humboldt, Fort	Med. Dept., U. S. A.	50
Humbug Park	Wheeler	4,847
Humpahyamp Pass	P. R. R. Reports	5,351
Hunter's Ranch	Wheeler	6,274
Do	Wheeler	6,275
Huntington, Mohave River	Wheeler	2,699
Hupps' Mill	Wheeler	2,667
Hyde's Union Saw-Mill	Wheeler	5,288
Illinois Ranch	Wheeler	1,759
Illinoistown	Toner	2,234
Independence, Camp	Wheeler	3,957
Do	Smithsonian Inst	4,800
Indian Gulch	Wheeler	951
Indian Valley	Toner	3,280
Indian Wells	C. P. R. R.	—20
Do	Wheeler	2,608
Ingalls, Mount	Wheeler	8,471
Inskip Toll-gate	Wheeler	4,808
Ione	C. P. R. R.	287
Ivanpah	Wheeler	4,238
Jackson	Toner	934
Jacksonville	Wheeler	602
Jelly's Ranch	Wheeler	360
Joe's Peak	Wheeler	9,712
John's, Mount	Petermann	8,000
Johnson's Pass	Goddard	6,752
Do	C. P. R. R. Surveys	7,374
Do	Simpson	7,222
Do	Whitney	7,339

Station.	Authority.	Elevation.
		<i>Feet.</i>
inch	Wheeler	3,460
inch, Bresser Creek	Wheeler	5,643
	Med. Dep., U. S. A	2,570
near Dutch Flat	Wheeler	3,416
use	Wheeler	3,562
ouse, on Reno and Susanville		
Beckwith's Pass	Wheeler	4,639
h Oregon Branch	C. P. R. R.	163
k	Whitney	14,000
Willow Creek	Wheeler	5,757
	Pacific R. R. Reports	398
	Wheeler	2,551
Peak	Wheeler	7,843
ouse	Wheeler	1,093
		2,558
it	Wheeler	1,589
nch	Wheeler	1,771
gs, Death Valley	Wheeler	—225
	Petermann	1,118
	Wheeler	7,677
ry Bridge	Wheeler	180
iding	C. P. R. R.	43
	Nov. Co. N. G. R. R	2,857
	Wheeler	16
	Wheeler	222
	Wheeler	4,024
ass	Wheeler	7,035
	Wheeler	4,851
anch	Wheeler	129
ia Spring	Wheeler	8,558
	Wheeler	6,491
ing, Mojave River	Wheeler	2,819
Ranch	Wheeler	563
to	Wheeler	10,437
	Whitney	10,577
ction, with Visalia Division	C. P. R. R.	26
	S. P. R. R.	782
ation	Wheeler	446
	Toner	66
t	Wheeler	3,409
	Wheeler	7,242
t	Wheeler	966
i, near Loyalton	Wheeler	4,949
l	Wheeler	3,756
h	Wheeler	3,647
Bluff	U. S. C. & G. S.	495
	C. P. R. R.	161
	Wheeler	1,693
ite	Wheeler	6,442
	C. P. R. R.	485
ass	Whitney	686
nding, Colorado River	Wheeler	606
	U. S. C. & G. S.	326
	U. S. C. & G. S.	378
	C. P. R. R.	55
	Wheeler	3,848
	Wheeler	3,810
	Wheeler (Theod.)	4,309
	Wheeler	4,214
ntain	Wheeler	9,670
ch	Wheeler	4,357
	Wheeler	3,243
	C. P. R. R.	265

Station.	Authority.	Elevation.
		<i>Feet.</i>
Los Angeles	Wheeler	326
Do	Pacific R. R. Reports	250
Do	L. A. & I. R. R.	260
Do	Signal Station	350
Los Encinos Ranch	Wheeler	772
Los Pozos Ranch	Wheeler	259
Los Toros	Wheeler	203
Lott's Diggins	Wheeler	6,310
Luther's Pass	Goddard	7,185
Do	Simpson	7,505
Lyell, Mt	Wheeler	13,190
Do	Whitney	13,217
Lyon's Ranch	Wheeler	1,397
McBride's	Wheeler	5,561
McBride's Peak	Wheeler	13,441
McConnahas'	Wheeler	3,981
McCumber's Mill	Pacific R. R. Reports	3,491
McDonald Peak	Wheeler	7,954
McDonald Ranch	Wheeler	5,297
McGill, Mt	Wheeler (Theod.)	9,214
McKesick's Peak	Wheeler	7,083
McKesick's Ranch	Wheeler	4,469
McQuade's	Wheeler	1,888
Macon	Toner	450
Madeline Hat Peak	Wheeler	7,676
Madeline Pass	P. R. R. Reports	5,667
Malaga	Wheeler	2,320
Mapes	Wheeler	5,039
Mare Island, N. E.	U. S. C. & G. S.	283
Mare Island, N. W.	U. S. C. & G. S.	101
Mare Island	U. S. C. & G. S.	29
Marin Island	U. S. C. & G. S.	74
Marion	U. S. C. & G. S.	74
Mariposa	Wheeler	1,962
Do	Town Hall	1,971
Do	post-office	1,942
Mariposa Peak	Whitney	3,700
Markleeville	Wheeler	5,525
Marlett's Lake	Wheeler	7,750
Marlett's Peak	Wheeler	8,631
Marlett's Ranch	Wheeler	8,074
Marl Spring	Pacific R. R. Reports	3,793
Martinez East	U. S. C. & G. S.	187
Martinez C. H.	U. S. C. & G. S.	27
Martin's	Monterey R. R.	16
Do	Monterey R. R.	1,982
Martin's Ranch	Wheeler	2,035
Marysville	C. P. R. R.	67
Do	Smithsonian Inst.	80
Master's Hill	U. S. C. & G. S.	2,445
Matthews' Ranch	Wheeler	6,294
Maturango, Mt.	Wheeler (Theod.)	8,844
Mayfield	Toner	34
Mayhews	S. & P. R. R.	58
Mende, Mt	Wheeler	10,540
Meadow Mountain	Wheeler	11,734
Meadow Valley	Wheeler	3,757
Melrose	C. P. R. R.	18
Menatchey Valley	Wheeler	9,503
Merced	C. P. R. R.	173
Merced Falls	Wheeler	360
Merced, Mt.	Wheeler	11,413

Station.	Authority.	Elevation.
		<i>Feet.</i>
Merritt's	C. P. R. R.	54
Mesquite Spring	Wheeler	2,010
Mesquite Wells .....	.....	3,674
Middle Lake, Surprise Valley	Wheeler	4,551
Midway	C. P. R. R.	356
Mill Creek, Sonora road	Wheeler	7,076
Miller, Fort	Med. Dept., U. S. A.	402
Miller's Ranch	Wheeler	4,055
Mills of Madera Flume & Trading Co.	Wheeler	4,499
Milton	Wheeler	376
Do	Wheeler	5,845
Mineral Bar	Toner	1,121
Mitchell's Ranch	Wheeler	4,285
Moccasin, Mt.	Wheeler	2,791
Modesto	C. P. R. R.	93
Mojave	C. P. R. R.	2,751
Mokelumne	Toner	5,523
Mokelumne, Mt.	Wheeler	9,467
Molate Island	U. S. C. & G. S.	169
Molate Point	U. S. C. & G. S.	133
Mono Lake	U. S. Geol. Survey	6,730
Mono Pass	Whitney	10,765
Monte	Toner	354
Monte Diablo	Whitney	3,856
Monterey	Monterey R. R.	7
Do	Med. Dept., U. S. A.	140
Moonlight Valley	Wheeler	5,433
Moquelumne Hill	Smithsonian Inst	1,502
Moran's Ranch	Wheeler	3,964
Mormon Bar	Wheeler	1,630
Morocojo	Monterey R. R.	15
Morongo Basin	Toner	1,500
Morrow, Mt.	Wheeler	2,065
Mosquito Spring	Wheeler	2,010
Mountain House	Wheeler	5,641
Mud Spring, Amandor road	Wheeler	5,973
Mud Springs	Wheeler	4,671
Murphy	U. S. C. & G. S.	2,703
Murphy's Cabin, Lake Tenatya	Wheeler	7,971
Murphy's Mining Village	Wheeler	2,195
Murphy's Ranch, Buffalo Salt Works	Wheeler	3,845
Myers' Ferry	Wheeler	7,434
Myers' Station	Wheeler	3,759
Nadeau's Station	Wheeler	2,394
Napa	C. P. R. R.	18
Napa Junction	C. P. R. R.	8
Napa Junction (Adalante)	C. P. R. R.	76
Nash's Ranch	Wheeler	4,431
Nelson	Toner	125
Nevada City	Nev. Co. N. G. R. R.	2,531
Newbury Peak	Wheeler	3,375
Newbury Park	Wheeler	830
Newcastle	C. P. R. R.	956
Newhall	C. P. R. R.	1,152
Newhall's Ranch	Wheeler	974
New Pass	P. R. R. Reports	3,164
New York Tent	Wheeler	1,143
Niagara Creek, Sonora road	Wheeler	6,690
Nicholas (near)	Pacific R. R. Reports	289
Nichols Point	Wheeler	6,262
Niles Junc. with San José Branch	C. P. R. R.	88
Nimshew	Wheeler	2,451
Noble's Pass	Wheeler	5,963

Station.	Authority.	Elevation.
Noble's Pass	Williamson	Foot.
Noman's Spring	Wheeler	8,368
Nora	C. P. R. R.	3,735
Nordhoff	Wheeler	154
North Dome (above valley 3,633)	Wheeler	810
North End Peak	Wheeler	7,494
Northups (Excelsior Hotel)	U. S. C. & G. S.	8,422
Norwalk	C. P. R. R.	4,540
Nott's Ranch	Wheeler	6
Null's Ranch	Wheeler	7,110
Oakdale	Wheeler	1,290
Oak Knoll	C. P. R. R.	140
Oakland	C. P. R. R.	103
Oakland Wharf	C. P. R. R.	12
Observation Peak	Wheeler	14
Ogburn's Ranch	Wheeler	8,000
Olancha Peak	Wheeler (Theod.)	2,470
Old Bony Mountain	Wheeler	12,950
Old Kimshew Settlement	Wheeler	1,800
Onjumi, Mountain	Whitney	4,900
Do	Wheeler	8,378
Orange	C. P. R. R.	8,300
Oroville	Wheeler	134
Oso Meadows	Wheeler	168
Oso Mountain	Whitney	5,900
Owen's River Bridge	Wheeler	3,303
Pacheco	U. S. C. & G. S.	3,618
Pacheco Pass	Whitney	81
Pacheco's Peak	Whitney	1,470
Pacific House	Wheeler	2,845
Pah Ute Mines	Wheeler	3,451
Pah Ute Peak	Wheeler	6,607
Pah Ute Springs	Wheeler	8,342
Pajaro	Toner	2,849
Paleta Peak	Wheeler	22
Palmer's Ranch	Wheeler	4,507
Pampa	Wheeler	2,346
Panamint	Wheeler	871
Panamint Station	Wheeler	6,605
Panoche Pass	Whitney	3,549
Panola	Toner	2,500
Paradise	Toner	48
Paris	C. P. R. R.	125
Park	L. A. & I. R. R.	400
Parker's Ranch	Wheeler	178
Parrott's (formerly Pandola) Ferry	Wheeler	4,136
Peach Spring	Wheeler	834
Peddler's Hill	Wheeler	5,303
Peña Blanca (Haigh's Ranch)	Wheeler	6,831
Peninsula Hill	U. S. C. & G. S.	1,807
Penole, Point	U. S. C. & G. S.	367
Penryn	Toner	68
Perkins	S. P. R. R.	624
Petaluma Creek	U. S. C. & G. S.	51
Phillips Ranch	Wheeler	111
Phillips Ranch	Wheeler	6,999
Phillips Station	Wheeler	242
Pilot Knob	Wheeler	6,871
Pilot Peak	Whitney	5,525
Pinos Mountain	Petermann	7,605
Pinto Rock	Wheeler	9,500
Piute Pass	K. P. R. R. surveys	3,903
Placerville	Toner	2,579
		2,109

Station.	Authority.	Elevation.
		<i>Feet.</i>
erville.....	Williamson.....	1,965
erville Post-office.....	Wheeler.....	1,893
sburgh.....	Toner.....	209
anton.....	C. P. R. R.....	353
ant Valley.....	Wheeler.....	2,405
of Rocks.....	Wheeler.....	2,542
pine Flat.....	Wheeler.....	7,749
ro.....	Wheeler.....	1,028
ville.....	Wheeler.....	4,394
's Hotel.....	Wheeler.....	2,558
eton.....	Wheeler.....	2,104
asco's Ranch.....	Wheeler.....	973
as Base, East End.....	U. S. C. & G. S.....	19
as Base, West End.....	U. S. C. & G. S.....	129
nid Mountain.....	Wheeler.....	10,127
ey.....	Wheeler.....	3,381
nalmingo.....	Toner.....	1,084
oad Flat.....	Wheeler.....	2,606
ho del Chino y de Jurupa.....	Med. Dept. U. S. A.....	1,000
nna.....	C. P. R. R.....	2,347
ide Camp.....	Wheeler.....	1,556
son.....	Wheeler.....	228
	U. S. C. & G. S.....	474
ing, Fort.....	Pacific R. R. Reports.....	596
o.....	Pacific R. R. Reports.....	675
o.....	Pacific R. R. Reports.....	674
o.....	Med. Dept. U. S. A.....	518
Bluff.....	Wheeler.....	307
o.....	Williamson.....	370
o.....	C. P. R. R.....	308
o..... Signal Station.....	U. S. Sig. Office.....	324
ing.....	C. P. R. R.....	556
ill Station.....	U. S. C. & G. S.....	188
ans Ranch.....	Wheeler.....	1,181
ook Station.....	Wheeler.....	2,394
late Peak.....	Whitney.....	13,400
ood City.....	Toner.....	10
's Station.....	Wheeler.....	1,477
voir House.....	Wheeler.....	1,013
voir, in Concord Valley.....	Wheeler.....	202
olds' Ferry.....	Wheeler.....	543
t Lake.....	P. R. R. Reports.....	4,014
rdson.....	U. S. C. & G. S.....	1,116
nond Point.....	U. S. C. & G. S.....	192
on.....	Toner.....	2,050
y Mountain.....	Petermann.....	7,500
rs' Ranch.....	Wheeler.....	4,345
rts' Ferry.....	Wheeler.....	184
rtson's.....	Wheeler.....	819
.....	Toner.....	179
lin.....	C. P. R. R.....	249
Spring.....	Pacific R. R. Reports.....	4,698
y Island.....	U. S. C. & G. S.....	157
's Ranch.....	P. R. R. Reports.....	4,181
Springs.....	Wheeler.....	3,545
Mountain.....	U. S. C. & G. S.....	2,205
iers.....	S. P. R. R.....	72
and's Ranch.....	Wheeler.....	6,222
erford.....	C. P. R. R.....	168
ett's Wells.....	Toner.....	312
amento.....	C. P. R. R.....	30
o.....	Smithsonian Inst.....	82
o.....	Williamson.....	81

Station.	Authority.	Elevation.
		<i>Feet.</i>
Sacramento Signal Station.....	U. S. Signal Office.....	70
Saddle (Malaga) Mountain.....	Wheeler.....	2,896
Saint Clair Ranch.....	Wheeler.....	1,961
Saint Helena.....	C. P. R. R.....	244
Salinas City.....	.....	42
Salsbury.....	S. P. R. R.....	126
Salt Wells.....	Wheeler.....	117
San Andreas.....	Wheeler.....	1,033
San Antonio Peak.....	U. S. C. & G. S.....	9,931
Do.....	Wheeler.....	10,191
San Benito.....	Smithsonian Inst.....	140
San Benito Pass.....	K. P. R. R. Surveys.....	2,700
San Bernardino.....	Wheeler.....	950
San Bernardino Mountain.....	Whitney.....	11,600
San Bernardo.....	Pacific R. R. Reports.....	1,118
San Bruno.....	Toner.....	16
San Buenaventura.....	Toner.....	12
San Carlos Peak.....	Whitney.....	4,977
Sand Creek.....	C. P. R. R.....	2,315
Sand Knoll.....	U. S. C. & G. S.....	227
San Diego.....	Emory.....	30
Do..... Mission.....	Pacific R. R. Reports.....	64
Do..... Signal Station.....	U. S. Signal Office.....	67
San Emigdio Store.....	Wheeler.....	788
San Fernando.....	C. P. R. R.....	1,066
Do.....	Wheeler.....	1,034
San Fernando Pass.....	Pacific R. R. Reports.....	1,940
San Fernando Peak.....	Wheeler.....	3,793
San Fernando Tunnel, south mouth.....	Wheeler.....	1,429
San Felipe.....	Pacific R. R. Reports.....	2,176
Do.....	Pacific R. R. Reports.....	2,456
San Francisco, Signal Station.....	U. S. Signal Office.....	60
Do..... Presidio.....	Med. Dept. U. S. A.....	150
Do.....	U. S. C. & G. S.....	384
San Francisquito Cañon.....	Wheeler.....	2,322
San Francisquito Pass.....	P. R. R. Reports.....	3,718
San Gabriel.....	Wheeler.....	419
Do..... Church.....	Wheeler.....	481
San Gabriel Mine.....	Wheeler.....	1,703
San Gabriel Peak.....	.....	6,232
San Gabriel Range.....	Whitney.....	4,500 to 6,500
San Gorgonio.....	C. P. R. R.....	2,560
San Gorgonio Pass.....	P. R. R. Reports.....	2,800
Do.....	T. & P. R. R.....	2,621
San Isabel Rancho.....	Toner.....	2,957
San Jacinto Mountain.....	Wheeler.....	10,987
San Jose.....	C. P. R. R.....	91
Do.....	U. S. C. & G. S.....	118
San Leandro.....	C. P. R. R.....	48
San Lorenzo.....	Toner.....	35
San Luis Obispo.....	Toner.....	402
San Luis Pass.....	P. R. R. Reports.....	1,556
San Luis Rey.....	Med. Dept. U. S. A.....	20
San Mateo.....	Toner.....	23
San Miguel.....	Toner.....	616
San Pablo Point.....	U. S. C. & G. S.....	97
San Pascual.....	Emory.....	716
San Pedro.....	Pacific R. R. Reports.....	30
San Pedro Point.....	U. S. C. & G. S.....	356
San Pedro Hill.....	Wheeler.....	1,462
San Quentin, Point.....	U. S. C. & G. S.....	173
Santa Ana.....	U. S. C. & G. S.....	3,620
Do.....	C. P. R. R.....	137
Santa Ana Hotel.....	Wheeler.....	141

Station.	Authority.	Elevation.
		<i>Feet.</i>
Santa Barbara.....	Smithsonian Inst.....	20
Santa Buena Ventura.....	Wheeler.....	146
Santa Catalene.....	Toner.....	3,000
Santa Clara.....	Smithsonian Inst.....	98
Santa Cruz Station.....	U. S. C. & G. S.....	359
Santa Cruz Point.....	U. S. C. & G. S.....	32
Santa Isabella.....		3,050
Santa Isabella Rancho.....	Pacific R. R. Reports.....	2,957
Santa Monica.....	L. A. & I. R. R.....	20
Do.....	Wheeler.....	15
Santa Paula.....	Wheeler.....	384
Santa Rosa Valley.....	Wheeler.....	175
San Vincente.....	L. A. & I. R. R.....	167
Say-qui-to Spring.....	Wheeler.....	5,553
Schaffers, Mount.....	Wheeler.....	6,864
School House.....	S. P. R. R.....	109
Schultz, Mount.....	Wheeler.....	2,275
Scodie's Ranch.....	Wheeler.....	2,716
Semi Pass.....	P. R. R. Reports.....	1,577
Sentinel Dome (above valley 4,160).....	Wheeler.....	8,011
Sesma.....	Toner.....	229
Sevastapol Flat.....	Wheeler.....	2,210
Seven Palms.....	C. P. R. R.....	1,126
Shafer's Station.....	Wheeler.....	4,026
Shasta.....		1,160
Shasta, Mount.....	Whitney.....	14,442
Shasta, Mount (timber line on).....		8,000
Shaw's Flat.....	Toner.....	2,270
Do.....	Wheeler.....	2,036
Shaw's Ranch.....	Wheeler.....	6,311
Shear's Bridge.....	Wheeler.....	2,007
Sheep Head.....	Wheeler.....	3,914
Sheffer's Hot Springs.....	Wheeler.....	4,094
Sheridan.....		113
Shingle Springs.....	S. P. R. R.....	1,427
Shinn's Ranch.....	Wheeler.....	5,040
Shoo-fly Bridge.....	Wheeler.....	3,071
Shumway's Ranch.....	Wheeler.....	5,067
Sierra Valley.....	Wheeler.....	4,910
Sierraville, Junc. of S. T. & L. Road.....	Wheeler.....	4,904
Do..... Post-office.....	Wheeler.....	4,880
Silliman, Mt.....	Whitney.....	11,623
Silver Creek.....	Toner.....	3,700
Silver Lake Hotel.....	Wheeler.....	7,174
Silver Mt.....	Whitney.....	10,934
Silver Mountain City.....	Wheeler.....	6,446
Silver Mountain Pass.....	Whitney.....	8,793
Simi Ranch.....	Wheeler.....	674
Smith's Ranch.....	Wheeler.....	1,047
Smoke Creek Depot.....	Wheeler.....	4,163
Snelling Post-office.....	Wheeler.....	252
Snider's Store.....	Wheeler.....	4,925
Snow's Hotel.....	Wheeler.....	5,217
Soap Spring.....	Wheeler.....	706
Soda Lake.....	Pacific R. R. Reports.....	1,002
Do.....	Wheeler.....	1,128
Soledad City.....	Wheeler.....	2,513
Soledad Pass.....	A. & P. R. R. surveys.....	3,215
Solfatara.....	Wheeler.....	5,908
Sonoma Mountain.....	U. S. C. & G. S.....	2,292
Sonora Mountain.....	Wheeler.....	11,478
Sonora Pass.....	P. R. R. Reports.....	10,115
Sonora post-office.....	Wheeler.....	1,816
Soto.....	Toner.....	186

Station.	Authority.	Elevation.
		<i>Feet.</i>
South Dome (lip) (above valley 4,953).....	Wheeler.....	8,804
South Fork Mountain.....	Wheeler.....	7,408
Spadra.....	C. P. R. R.....	705
Do.....	Wheeler.....	802
Spanish Ranch.....	Wheeler.....	3,636
Sprague's Ranch.....	Wheeler.....	2,950
Springville.....	Wheeler.....	48
Stanford Mountain.....	Whitney.....	9,175
Starr King, Mt. (above valley 5,171).....	Wheeler.....	9,022
State Line Peak.....	Wheeler.....	8,405
Stevens Bar Ferry.....	Wheeler.....	614
Stevens Mountain.....	Wheeler.....	10,011
Stevens Ranch, Hope Valley.....	Wheeler.....	7,382
Stockton, Junc. with S. & V. & S. & C. R. R's.....	C. P. R. R.....	23
Stockton's Cabin.....	Wheeler.....	5,877
Stockton Mill.....	Wheeler.....	4,639
Stokes Mountain.....	Wheeler.....	2,069
Stonebreakers.....	Wheeler.....	4,360
Stony Point.....	.....	500
Storms.....	Nev. Co. N. G. R. R.....	2,424
Strawberry.....	Wheeler.....	5,238
Strawberry Station (toll-house).....	Wheeler.....	5,695
Strawberry Valley.....	Toner.....	3,567
Do.....	Williamson.....	5,707
Sugar Loaf Mountain.....	Wheeler.....	8,416
Sulphur Peak.....	U. S. C. & G. S.....	3,471
Sulphur Spring Ranch.....	Wheeler.....	4,466
Summit Peak.....	Wheeler.....	8,301
Summit Post-office, west of Beckwith's Pass.....	Wheeler.....	4,875
Summit Station.....	Wheeler.....	6,983
Summit Valley.....	Toner.....	6,765
Sumner.....	C. P. R. R.....	415
Sunday Peak.....	Wheeler.....	8,335
Do.....	Wheeler.....	11,089
Sunoe.....	Toner.....	264
Surveyors' Wells.....	Wheeler.....	3,567
Susanville.....	Wheeler.....	4,195
Suspension Bridge, Mokelumne River.....	Wheeler.....	2,092
Sutler.....	Toner.....	919
Swann's Ranch, E. Walker River.....	Wheeler.....	5,042
Sweetwater Mountain.....	Wheeler.....	11,778
Sycamore.....	.....	302
Sycamore Grove.....	Wheeler.....	447
Tahoe City.....	Wheeler.....	6,252
Tahoe Lake.....	R. R. Reports.....	6,247
Tamalpais, Mount.....	Whitney.....	2,597
Tamarac.....	.....	6,209
Tamarack Flat.....	Wheeler.....	6,234
Tannery.....	Wheeler.....	4,400
Tapo Ranch.....	Wheeler.....	1,373
Tassett.....	.....	83
Taylor's Ranch.....	Wheeler.....	1,047
Taylorville.....	Wheeler.....	3,479
Tehachapai, Mount.....	Wheeler (Theod.).....	9,214
Tehachapai Pass.....	Wheeler.....	3,832
Tehama.....	C. P. R. R.....	222
Tejon, Fort.....	Med. Dept. U. S. A.....	3,240
Do.....	Wheeler.....	3,245
Tejon Pass.....	P. R. R. Reports.....	5,364
Tejon Ranch.....	Wheeler.....	1,450
Telegraph Hill.....	U. S. C. & G. S.....	300
Telescope Mountain.....	Wheeler (Theod.).....	10,937
Temescal Mountain.....	Wheeler (Theod.).....	5,730
Thomas Ranch.....	Wheeler.....	3,772

Station.	Authority.	Elevation.
		<i>Feet.</i>
Thompson	C. P. R. R.	9
Thompson's	Wheeler	2, 114
Thompson's Ferry	Wheeler	188
Thompson's Peak	Wheeler	7, 752
Thunder Mountain	Wheeler	9, 121
Tilley's Ranch	Wheeler	2, 609
Tipton	C. P. R. R.	267
Todos Santos Pass	P. R. R. Reports	637
Toolucha Peak	Wheeler	7, 022
Tomales Bay	U. S. C. & G. S.	673
Topsail Rock	U. S. C. & G. S.	81
Towler's, Napa Valley .....	.....	369
Town Talk	Nev. Co. N. G. R. R.	2, 774
Tragedy Spring	Wheeler	7, 989
Trinchera	Wheeler	7, 567
Trinidad .....	.....	5, 820
Trout Meadows	Wheeler	5, 998
Truckee	C. P. R. R.	5, 819
Do	Wheeler	5, 795
Truckee Pass	P. R. R. Reports	7, 200
Truebody	C. P. R. R.	88
Tulare	C. P. R. R.	282
Tulare Lake	Pacific R. R. Reports	398
Tull Flat	Wheeler	5, 594
Tullock	Toner	106
Tuolumne Grove	Wheeler	5, 794
Turner's Ranch, Sierra Valley	Wheeler	4, 904
Tuttletown	Wheeler	1, 321
Twin Lake	Wheeler	5, 106
Twin Peak	Wheeler	8, 824
Twin Peaks	Whitney	8, 925
Twist's Ranch	Wheeler	1, 121
Tyler's Ranch	Wheeler	4, 902
Uhl's Ranch	Wheeler	2, 662
Union Camp	Smithsonian Inst	54
Union Hill	Nev. Co. N. G. R. R.	2, 706
Vacaville	Toner	175
Valla Citron	Emory	1, 539
Vallecito	Toner	1, 643
Do .. Post-Office	Wheeler	1, 748
Valejo	U. S. C. & G. S.	87
Do	U. S. C. & G. S.	371
Vallejo (North)	C. P. R. R.	26
Vallejo (South)	C. P. R. R.	13
Vergennes Ranch	Wheeler	940
Vina .....	.....	211
Visalia	Williamson	384
Visalia, Signal Station	U. S. Signal Office	348
Volcano	Wheeler	2, 075
Wabler Lake House	Wheeler	6, 804
Wades' Meadows	Wheeler	4, 567
Wades' Peak	Wheeler	7, 153
Wahguyhe Mountain	Wheeler (Theod.)	8, 527
Walker's Pass	P. R. R. Reports	5, 302
Do	Wheeler	5, 322
Wallace's Ranch, Warner Lake	Wheeler	4, 487
Walnut Grove	C. P. R. R.	308
Warm Springs	C. P. R. R.	46
Warm Springs, Sonora Road	Wheeler	7, 385
Warner's Pass	P. R. R. Reports	3, 870
Warner's Ranch	P. R. R. Reports	3, 022
Warren's Peak	Wheeler	9, 668
Washington, Mount	Wheeler	10, 892
Washington Quartz Mill	Wheeler	1, 052

Station.	Authority.	Elevation.
		<i>Feet.</i>
Watsonville.....		45
Waucoba Peak.....	Wheeler.....	11,267
Webster.....	C. P. R. R.....	24
Welden.....	Wheeler.....	2,668
Welds.....	Wheeler.....	2,217
Wellington Mountain.....	Wheeler.....	7,665
West Point.....	Wheeler.....	2,749
West's Ranch.....	Wheeler.....	596
Wheatland.....	C. P. R. R.....	84
White Granite Mountain.....	Wheeler.....	7,045
White Rock.....	S. P. R. R.....	495
Whitney.....	Wheeler.....	10,051
Whitney Meadows.....	Wheeler.....	9,371
Whitney, Mt.....	Whitney.....	14,898
Wellington Mountain.....	Wheeler.....	7,665
Wild Rose Spring.....	Wheeler.....	4,683
Wiley's Station, Amador Road.....	Wheeler.....	5,027
Williamson River.....	Wheeler.....	4,387
Williamson's Lake.....		2,588
Willow Lake.....	Wheeler.....	5,382
Willow Ranch.....	Wheeler.....	4,275
Willow Spring.....	Wheeler.....	420
Willow Spring (Head of Willow Creek).....	Wheeler.....	5,084
Willow Tree Spring.....	Wheeler.....	2,500
Wilson's Ranch.....	Wheeler.....	1,115
Woodford's.....	Wheeler.....	5,676
Woodland, Junction with N. R. R.....	C. P. R. R.....	63
Do.....	U. S. C. & G. S.....	58
Woods Peak.....	Whitney.....	10,552
Workman's Hill.....	Wheeler.....	1,363
Workman's Ranch.....	Wheeler.....	362
Wright Lake.....	P. R. R. Reports.....	4,470
Yellowbally.....	Petermann.....	8,000
Yankee Jim's.....		3,185
Yerba Buena.....	U. S. C. & G. S.....	345
Yosemite Valley.....	Whitney.....	4,060
Yosemite Valley (cliffs and domes about it range from 7,000 to 9,900 feet above sea).....	Williamson.....	3,935
You Bet.....	Nev. Co. N. G. R. R.....	2,172
Yountville.....	C. P. R. R.....	97
Do.....	Cal. P. R. R.....	105
Yreka.....	Williamson.....	2,731
Yreka Gap.....	Whitney.....	6,642

COLORADO.

Station.	Authority.	Elevation.
		<i>Feet.</i>
.....	Hayden	9,300
.....	D. & R. G. R. R.	9,399
.....	D. & R. G. R. R.	5,508
.....	King	9,279
unt	Hayden	14,054
.....	Wheeler	14,211
.....	K. P. R. R.	5,458
b	Wheeler	12,274
.....	R. V. & B. & C. R. R.	4,656
n Juan Junc	D. & R. G. R. R.	7,524
tion	Wheeler	8,961
tion	Wheeler	8,905
.....	D. & R. G. R. R.	11,148
tion	Wheeler	4,136
.....	D. & R. R. R. G.	9,428
.....	Hayden	8,513
.....	Wheeler	10,254
.....	Wheeler	13,254
.....	D. & R. G. R. R.	8,118
anch	Wheeler	4,249
.....	D. & R. G. R. R.	6,532
.....	Wheeler	6,622
.....	King	10,661
rk	Hayden	6,433
ss	R. R. Surveys	8,050
nt	Wheeler	13,853
.....	Hayden	14,245
.....	D. & R. G. R. R.	7,866
.....	D. & R. G. R. R.	5,917
.....	D. & R. G. R. R.	6,137
.....	K. & P. R. R.	4,006
ak	Hayden	13,520
Timber line on	Hayden	11,100
.....	D. & R. G. R. R.	5,991
ass	Wheeler	13,286
.....	C. C. R. R.	5,214
idge	Wheeler	7,741
ount	Hayden	13,647
ss	Wheeler	11,445
.....	K. P. R. R.	4,648
.....	C. C. R. R.	5,322
e	D. P. R. R.	6,301
ount, Timber line on	Hayden	11,325
.....	D. & R. G. R. R.	6,743
.....	Wheeler	6,367
.....	Ruffner	6,530
.....	Whitney	11,956
.....	Hayden	9,753
.....	G. L. & S. J. R. R.	9,676
sin	Hayden	11,493
Timber line on	Hayden	11,100
.....	D. & R. G. R. R.	7,592
.....	Hayden	14,176
k	Wheeler	12,824
.....	Hayden	12,960
.....	D. & R. G. R. R.	6,207
.....	Hayden	11,906

Station.	Authority.	Elevation.
		<i>Feet.</i>
Basalt Peak	Wheeler	11,560
Bear Creek	G. & S. P. R. R.	5,547
Bear Creek Pass	Hayden	12,600
Do	Wheeler	11,606
Bear Creek Station	Parry	7,198
Beaver Brook	C. C. R. R.	6,391
Beaver Creek	D. & R. G. R. R.	4,976
Belden	D. & R. G. R. R.	8,346
Bellevue Peak	Wheeler	12,673
Do	Hayden	12,350
Bennett	K. P. R. R.	5,496
Bent Cañon	Wheeler	4,696
Benton	D. & R. G. R. R.	6,941
Bergen Peak	Hayden	9,555
Bergen's Mountain	Hayden	9,773
Bergen's Park	Hayden	7,643
Bergen's Ranch	Parry	7,752
Berthoud Pass	Parry	11,349
Do	U. P. R. R. Surveys ..	11,350
Bessemer	D. & R. G. R. R.	4,751
Big Hill	C. C. R. R.	6,823
Big Lake (San Luis Valley)	Wheeler	7,478
Bird's Eye	D. & R. G. R. R.	10,161
Bismarck P. O.	Wheeler	7,736
Bison Peak	Hayden	12,237
Blackburn	D. & R. G. R. R.	7,357
Black Hawk	C. C. R. R.	8,031
Do	Whitney	7,543
Blackhead	Hayden	12,514
Blackwell	A. T. & S. F. R. R.	3,573
Blair	R. V. & B. O. C. R. R.	4,705
Blaine, Mt.	Wheeler (Theod)	14,249
Do	Wheeler	13,905
Blanca Peak	Wheeler	14,269
Do	Hayden	14,464
Blodget's Peak	Hayden	9,500
Boon	A. T. & S. F. R. R.	4,458
Borst's	D. & R. G. R. R.	6,811
Boulder	G. B. & C. R. R.	5,308
Do	Parry	5,536
Boulder Pass	Hayden	11,670
Do	V. P. R. R. Surveys ..	11,900
Boulder Peak	Wheeler	12,417
Boundary Peak	Hayden	12,840
Box Elder	K. P. R. R.	5,528
Bradford Junction	Parry	8,069
Brant's Junction	D. & R. G. R. R.	9,893
Brazos Peak	Hayden	11,274
Breckenridge	Whitney	9,674
Breckenridge Pass	Wheeler	11,503
Bridgeport	D. & R. G. R. R.	4,727
Brighton	D. P. R. R.	4,979
Bristol Head	Hayden	12,800
Do	Wheeler (Theod)	12,637
Bross, Mt.	Hayden	9,468
Brownville	G. L. & S. J.	9,151
Brush	R. V. & B. & C. R. R.	4,235
Buck Mountain	King	10,877
Buckskin Mountain	Hayden	14,296
Buena Vista	D. & R. G. R. R.	7,948
Do	D. & R. G. R. R.	7,921
Do	D. & R. G. R. R.	7,927
Buffalo, Mount	Wheeler	13,755
Buffalo Peak	Hayden	13,541

Station.	Authority.	Elevation.
		<i>Feet.</i>
Buffalo Peak	Wheeler	13,328
Do..... Timber line on	Hayden	12,041
Buffalo Springs, South Park	Wheeler	8,952
Do.....	Whitney	8,901
Burlington .....	.....	4,976
Burnham	D. & R. G. R. R.	5,220
Burroughs'	Wheeler	10,878
Butte Valley P. O.	Wheeler	5,884
Byers	K. P. R. R.	5,203
Byers, Mount.	Hayden	12,778
Do..... Timber line on	Hayden	11,400
Cactus	D. & R. G. R. R.	4,859
Caddoa	A., T. & S. F. R. R.	3,756
Calumet	D. & R. G. R. R.	8,849
Cambia	G. & S. P. R. R.	5,944
Camel Peak	King	9,158
Cameron's Cone	Hayden	11,460
Cameron, Mount. ....	.....	14,000
Canby, Mount.	Hayden	13,274
Do.....	Wheeler	13,356
Canfield	D. & B. V. R. R.	5,048
Cañon City	Wheeler	5,396
Do..... (Old Depot)	D. & R. G. R. R.	5,320
Do..... (New Depot)	D. & R. G. R. R.	5,322
Do..... (Leadville Junc.)	D. & R. G. R. R.	5,313
Do..... (Grape Creek)	D. & R. G. R. R.	5,357
Capitol Mountain	Hayden	13,997
Caracas	D. & R. G. R. R.	6,151
Carboneria	D. & R. G. R. R.	6,402
Carbon Mountain	Wheeler	12,078
Caribou .....	.....	9,167
Do..... Planters' Hotel	Hayden	9,905
Carlisle Springs	D. & R. G. R. R.	4,929
Carlton	A., T. & S. F. R. R.	3,517
Carr	D. P. R. R.	5,696
Carr City	R. V. & B. & C. R. R.	4,357
Carr's Cabin, Antelope Park	Wheeler	9,909
Cascade Hill	D. & R. G. R. R.	7,763
Case's	D. & R. G. R. R.	4,982
Castle Peak	Hayden	14,115
Castle Rock	D. & R. G. R. R.	6,198
Catlin	A., T. & S. F. R. R.	4,234
Cebolla	D. & R. G. R. R.	7,330
Cedar Creek	D. & R. G. R. R.	6,728
Cedar Point	K. P. R. R.	5,712
Central City	C. C. R. R.	8,484
Do.....	Parry	8,300
Centreville	Wheeler	7,727
Cerro	D. & R. G. R. R.	7,942
Chama Peak	Wheeler	12,248
Chandler Creek Junction	D. & R. G. R. R.	5,193
Cheyenne Mountain	Hayden	9,948
Cheyenne Wells	K. P. R. R.	4,277
Chicago Lake	Hayden	11,500
Chico	A., T. & S. F. R. R.	4,530
Chicosa	Wheeler	6,076
Do.....	D. & R. G. R. R.	6,095
Chief	Hayden	11,833
Chimney Gulch	C. C. R. R.	5,909
Christlake	Toner	7,186
Cimarron	D. & R. G. R. R.	6,874
Cinnamon Mountain	Hayden	12,600
Clark's Peak	King	13,167
Clayton Cone	Hayden	9,500

Station.	Authority.	Elevation.
		<i>Feet.</i>
Clelland.....	A., T. & S. F. R. R.....	5, 145
Cleora.....	D. & R. G. R. R.....	6, 293
Cloud City.....	D. & R. G. R. R.....	8, 940
Coal Creek.....	D. & R. G. R. R.....	5, 338
Coal Junction.....	D. & R. G. R. R.....	6, 186
Coal Mountain.....	King.....	8, 430
Cochetopa.....	D. & R. G. R. R.....	7, 821
Cochetopa Dome.....	Wheeler.....	11, 673
Cochetopa or Los Pinos Agency.....	Wheeler.....	9, 088
Cochetopa Pass.....	Wheeler.....	10, 032
Do.....	P. R. R. Reports.....	10, 032
Do.....	Hayden.....	10, 000
Coffintop.....	Hayden.....	8, 003
Coke Ovens.....	D. & R. G. R. R.....	5, 232
Colfax.....	Wheeler.....	8, 599
Colina.....	D. & R. G. R. R.....	6, 712
Collins, Fort.....	Toner.....	4, 815
Colorado City.....	D. & R. G. R. R.....	6, 092
Do.....	Parry.....	6, 344
Do.....	Hayden.....	6, 049
Colorado Springs.....	Wheeler.....	6, 010
Do.....passenger depot.....	D. & R. G. R. R.....	5, 970
Do.....Manitou Junction.....	D. & R. G. R. R.....	5, 967
Do.....freight depot.....	D. & R. G. R. R.....	5, 960
Do.....signal station.....	U. S. Signal Office.....	6, 032
Comanche Peak.....	King.....	11, 929
Conejos.....	Hayden.....	7, 880
Do.....	Wheeler.....	7, 435
Conejos Peak.....	Hayden.....	13, 183
Conical Butte.....	Hayden.....	9, 848
Corliss Springs.....	.....	5, 985
Corona.....	R. V. & B. & C. R. R.....	4, 547
Corral Peak.....	Hayden.....	11, 333
Costilla.....	Wheeler.....	7, 551
Costilla Pass.....	Palmer.....	9, 520
Cotopaxi.....	D. & R. G. R. R.....	6, 364
Cottonwood.....	C. C. R. R.....	7, 178
Coxo.....	D. & R. G. R. R.....	9, 731
Cranes Park.....	D. & R. G. R. R.....	10, 097
Crescent Peak.....	King.....	10, 255
Crested Butte (Mt.).....	Hayden.....	12, 052
Do.....depot.....	D. & R. G. R. R.....	8, 871
Crested Butte (Irwin Junction).....	D. & R. G. R. R.....	8, 853
Crestone.....	Hayden.....	14, 233
Do.....	Wheeler.....	13, 190
Crestone, timber line on.....	Wheeler.....	12, 107
Crooks.....	D. & R. G. R. R.....	8, 144
Crystal Creek.....	D. & R. G. R. R.....	6, 869
Crystal Lake.....	D. & R. G. R. R.....	9, 389
Cub Mountain.....	Hayden.....	10, 623
Cucamonga Peak.....	Wheeler.....	8, 529
Cucharas.....	D. & R. G. R. R.....	5, 921
Cucharas (El Moro) Junction.....	.....	5, 925
Cucharas Pass.....	Wheeler.....	9, 994
Cuerno Verde Peak.....	Wheeler.....	12, 341
Culebra Church.....	Wheeler.....	8, 010
Culebra Peak.....	Hayden.....	14, 069
Cumbres.....	D. & R. G. R. R.....	9, 993
Cunningham Pass.....	Hayden.....	12, 090
Cunningham Pass, Timber line on.....	Hayden.....	11, 500
Curasse.....	D. & R. G. R. R.....	4, 493
Curecanti.....	D. & R. G. R. R.....	7, 052
Currant Creek Pass.....	Wheeler.....	9, 654
Daly, Mt.....	Hayden.....	13, 193

Station.	Authority.	Elevation.
		<i>Feet.</i>
n	Hayden	9,441
)	Wheeler	9,333
rail	K. P. R. R.	5,185
orte	Wheeler	7,743
)	Hayden	7,750
)	D. & R. G. R. R.	7,858
orte Hill	Wheeler	8,218
orte Peak	Wheeler	13,084
	D. & R. G. R. R.	4,947
r Union Depot	Mean result of R. R. levels ...	5,175
.. Junction	D. P. R. R.	5,184
.. signal station	U. S. Signal Office	5,294
	R. V. & B. & C. R. R.	5,159
, Mt	Hayden	12,253
nd Peak	King	9,925
(Breckenridge Junction)	D. & R. G. R. R.	8,852
)	D. & R. G. R. R.	7,216
iquez	D. & R. G. R. R.	4,771
	D. & R. G. R. R.	7,617
n's Ranch	Wheeler	6,379
as	D. & R. G. R. R.	6,303
	D. & R. G. R. R.	8,035
y	D. & S. P. R. R.	10,339
nt	C. C. R. R.	7,924
s Peak	Wheeler	13,502
go, passenger depot	D. & R. G. R. R.	6,498
o .. freight depot	D. & R. G. R. R.	6,505
Park	D. & R. G. R. R.	9,205
o	Hayden	8,440
River Peak	Hayden	12,648
	A., T. & S. F. R. R.	5,671
ountain	King	7,588
liver Pass	Hayden	11,163
v	R. V. & B. & C. R. R.	3,879
ton	D. & R. G. R. R.	6,332
een-mile Mountain	Wheeler	12,278
)	D. & R. G. R. R.	9,836
Junction	D. & R. G. R. R.	9,828
Smelter Junction	D. & R. G. R. R.	9,828
, Mt	Hayden	14,351
o .. Timber line on	Hayden	11,871
ountain	Wheeler	13,101
ark	D. & R. G. R. R.	8,761
o	Hayden	9,840
ro	D. & R. G. R. R.	5,857
ro Mines	D. & R. G. R. R.	6,537
re	Parry	8,583
o	C. C. R. R.	8,245
neer Mountain	Hayden	12,971
o	Wheeler	13,277
mann, Mt., Timber line on	Hayden	11,578
	D. & B. V. R. R.	5,024
ante	D. & R. G. R. R.	4,814
Peak	King	11,976
)	Hayden	4,745
o	D. P. R. R.	4,646
o	King	4,775
, Mount	Hayden	14,330
o	Wheeler	14,321
o .. Timber line on	Wheeler	11,723
o .. Timber line on	Hayden	11,300
sior	D. & R. G. R. R.	4,895
lay	Wheeler	10,076
o	Whitney	9,946

Station.	Authority.	Elevation.
		<i>Feet.</i>
Fairplay	D. & S. P. R. R.	9,941
Fall River	Whitney	7,708
Do	C. C. R. R.	7,665
Farnham's Ranch	Hayden	9,548
Farnum's Peak	Hayden	11,400
First View	K. P. R. R.	4,577
Fish Creek .....	.....	6,889
Fisher's Peak	Hayden	9,400
Flora, Mount	Parry	12,878
Florida	D. & R. G. R. R.	6,696
Florissant	Wheeler	8,184
Floyd Hill	C. C. R. R.	7,201
Fork's Creek	C. C. R. R.	6,878
Fountain	D. & R. G. R. R.	5,503
France's Coal Mine	Hayden	6,693
Freeman's Peak	Hayden	11,600
French Pass	Wheeler	12,044
Frisco	D. & R. G. R. R.	9,064
Frustrum Mountain	Wheeler	13,893
Galena Mountain	Hayden	13,290
Gardner	Wheeler	6,956
Do	Hayden	7,000
Garland, Fort	Wheeler	7,849
Do	D. & R. G. R. R.	7,914
Do	Hayden	7,996
Do	Wheeler, R. R. levels ..	7,937
Garlick's Ranch	Parry	7,105
Georgetown	C. C. R. R.	8,474
Do	Parry	8,452
Do	Astronomical Station ..	8,587
Do	Barton House	8,594
Georgia Pass	Wheeler	11,770
Do	Parry	11,487
Do	Hayden	11,811
Gibson Peak	Wheeler	13,729
Girardott	D. & R. G. R. R.	6,358
Glacier, Mount	Wheeler	14,243
Glacier Peak	Hayden	12,654
Do	Wheeler	13,360
Glade	D. & R. G. R. R.	6,515
Godfrey	K. P. R. R.	5,603
Golden	C. C. R. R.	5,684
Do	Whitney	5,690
Golden Peak	Hayden	9,650
Gold Hill	Hayden	8,463
Do	Parry	8,636
Goodnight	D. & R. G. R. R.	4,708
Gore's Pass	Hayden	9,570
Gothic Mountain	Hayden	12,570
Granada	A. T. & S. F. R. R.	3,436
Grand Junction	D. & R. G. R. R.	4,561
Grand Lake	Hayden	8,153
Grand Mesa	Hayden	10,000
Granite	D. & R. G. R. R.	8,923
Do	Hayden	8,883
Grant	D. & S. P. R. R.	8,491
Do	Hayden	8,587
Do	Wheeler	8,497
Gray's Peak	Hayden	14,341
Do	Whitney	14,319
Do	Timber line on	11,100
Do	Wheeler	14,380
Gray's Peak, divide between north and south	Wheeler	13,929

Station.	Authority.	Elevation.
		<i>Feet.</i>
.....	D. P. R. R	4,642
.....	King	4,779
n	D. & R. G. R. R	5,076
n Mountain	Hayden	12,230
d	D. & R. G. R. R	6,899
ountain	Hayden	7,993
.....	D. & R. G. R. R	5,782
ountain	Wheeler	11,589
.....	Hayden	11,273
Peak	Hayden	13,956
Peak, Timber line on	Hayden	11,758
1	Hayden	7,743
.....	Wheeler	7,419
.....	D. & R. G. R. R	7,658
1, Crested Butte Junc	D. & R. G. R. R	7,660
1, Mt	Hayden	12,688
.....	Wheeler	12,242
.....	D. & R. G. R. R	9,965
h	C. C. R. E	6,212
ount	Hayden	13,565
.....	Parry	13,223
ount, Timber line on	Hayden	11,811
Peak	King	13,832
anch, San Luis Valley	Wheeler	7,839
melting Works	Wheeler	9,916
a	Hayden	9,743
.....	Whitney	9,875
n Pass	Ruffner	12,370
..... Timber line on .....	.....	10,840
n's Ranch	Wheeler	7,227
Pass	Wheeler	12,263
Peak	Hayden	13,997
.....	Wheeler	14,149
ak	King	10,906
bble Mines .....	.....	8,800
.....	D. & R. G. R. R	7,323
's Ranch	Wheeler	8,898
, Mount	Hayden	14,375
.....	Whitney	14,452
.....	Wheeler	14,151
..... Timber line on	Hayden	12,117
Pass	Wheeler	10,780
.....	D. & R. G. R. R	9,136
ville .....	.....	6,392
tion, Deer Range	Wheeler	9,613
.....	D. & R. G. R. R	7,349
Peak	Hayden	12,042
on's Island	D. P. R. R	5,028
on's Ranch	Whitney	8,257
's Park	D. & S. P. R. R	8,141
l	D. & R. G. R. R	4,460
o Peak	Hayden	9,014
.....	Wheeler	6,618
.....	D. & R. G. R. R	6,623
Mountain	Hayden	13,135
.....	R. V. & B. & C. R. R	4,220
.....	A., T. & S. F. R. R	3,877
.....	A., T. & S. F. R. R	5,704
.....	A., T. & S. F. R. R	3,377
ess Mountain	Hayden	14,176
.....	D. & R. G. R. R	8,935
ike Peak	Hayden	13,657
Pass	Wheeler	11,637

Station.	Authority.	Elevation.
		<i>Feet.</i>
Hoosier Pass	Whitney	11,546
Do	U. P. R. R. surveys	11,500
Horsefly, Mount.	Wheeler	10,504
Horseshoe Mountain	Whitney	13,988
Hot Springs	Parry	7,725
Howard's	D. & R. G. R. R.	6,692
Howardville	Hayden	9,700
Do	Wheeler	9,527
Hudson	R. V. & B. & C. R. R.	4,993
Huerfano	Wheeler	4,714
Do	D. & R. G. R. R.	5,687
Hughes, Astronomical Station	Wheeler	5,021
Hugo	K. P. R. R.	5,050
Hunkill	C. C. R. R.	7,626
Hunchback Mountain	Wheeler	13,755
Hunt's Mountain	Wheeler	14,054
Hunt's Peak	Wheeler	14,055
Do	Hayden	12,333
Hunt's Peak, foot of	Wheeler	10,517
Hurricane Peak	Wheeler	13,565
Husted's	D. & R. G. R. R.	6,575
Idaho Springs	Wheeler	7,284
Do	C. C. R. R.	7,541
Ignacio	D. & R. G. R. R.	6,415
Indian Creek Pass	Wheeler	9,803
Iron Mine	D. & R. G. R. R.	9,005
Iron Springs	A., T. & S. F. R. R.	4,674
Jack's Cabin	D. & R. G. R. R.	8,284
James' Peak	Hayden	13,283
Do	Timber line on	11,100
Jamestown	Hayden	7,123
Jefferson	Wheeler	9,863
Do	Hayden	9,868
Do	Parry	9,842
Johnson	D. P. R. R.	4,826
Johnson's Ford, Umcompahgre River	Wheeler	5,702
Juniata	D. & R. G. R. R.	6,319
Junction House	Hayden	8,153
Junction Peak	King	7,868
Kahnah	D. & R. G. R. R.	4,649
Keeldar	D. & R. G. R. R.	9,948
Kelley	D. & R. G. R. R.	5,614
Kelso Cabin	Hayden	10,893
Kendall, Mount	Hayden	13,380
Do	Wheeler	13,542
Kenny's Ranch, on Dead Man's Creek	Wheeler	7,830
Kenosha Cones	Hayden	{ 12,350
		{ 12,340
Kenosha House	D. & S. P. R. R.	9,606
Kenosha Summit	D. & S. P. R. R.	9,905
Kezar	D. & R. G. R. R.	7,409
Kit Carson	K. P. R. R.	4,289
Kit Carson's Peak	Hayden	14,100
Kokomo	D. & R. G. R. R.	10,609
Labrau	D. & R. G. R. R.	5,167
Do	Florence Coal Creek Junction	5,177
Do	Astronomical Station	5,218
La Jara	D. & R. G. R. R.	7,587
La Junta	Wheeler	4,094
Do	A., T. & S. F. R. R.	4,044
Do	Wheeler	6,612
Lake	K. P. R. R.	5,301
Lake City	Wheeler	8,753

Station.	Authority.	Elevation.
		<i>Feet.</i>
City.....	Hayden	8,550
Creek Pass	Wheeler	12,226
House, on slope Pike's Peak	Wheeler	10,108
bert	Wheeler	6,561
born, Mount	Hayden	11,337
bton	D. & R. G. R. R.	6,537
's End	Hayden	10,634
's Ranch	Wheeler	6,380
lata	D. & R. G. R. R.	9,950
lata Junction	D. & R. G. R. R.	9,950
lata, Mountain	Wheeler	13,316
Do	Hayden	14,311
Do	Hayden	12,080
Do	King	5,065
st	D. & R. G. R. R.	7,643
spur	D. & R. G. R. R.	6,649
Animas (west)	Wheeler	3,886
Do	A., T. & S. F. R. R.	3,854
am .....	.....	4,600
eta	D. & R. G. R. R.	7,002
eta Peak	Wheeler	11,654
son	C. C. R. R.	8,111
ville	D. & R. G. R. R.	10,178
ox	D. & R. G. R. R.	4,705
ard's Ranch, Arkansas River	Wheeler	8,335
Peak	Hayden	10,954
Do	Wheeler	11,218
's Mountain	Hayden	11,433
Do	Hayden	11,100
Do	Hayden	11,100
Kiln	D. & R. G. R. R.	5,552
Do	D. & R. G. R. R.	6,219
Do	D. & R. G. R. R.	4,862
Stone .....	.....	.....
or White Earth Creek Pass	Wheeler	11,314
on, Mount	Wheeler	14,375
Do	Hayden	14,297
Do	Hayden	12,051
Do	Hayden	12,051
strom's Mill	Parry	8,738
s Butte	D. & R. G. R. R.	5,346
s Giant	D. & R. G. R. R.	10,046
ston	D. & R. G. R. R.	5,350
wood's Ranch	Wheeler	4,997
t, Camp	Ruffner	8,069
Cone	Hayden	12,761
's Cañon	Wheeler	8,402
's Pass	Palmer	7,660
's Peak	Hayden	14,271
Do	King	14,050
Do	Hayden	11,100
Do	Hayden	11,100
Do	D. & R. G. R. R.	9,615
Do	Hayden	9,290
Do	Wheeler	9,065
Knife Pass	Palmer	8,400
Park Mountain	Hayden	11,800
er Spur	D. & R. G. R. R.	9,074
on, Fort	D. P. R. R.	4,896
, Fort	Wheeler	3,910
issett .....	.....	5,520
mb's Peak	Wheeler	13,154
e	D. & R. G. R. R.	6,716
olia	K. P. R. R.	5,336
t	D. & R. G. R. R.	9,558
Do	D. & R. G. R. R.	9,608
Do	D. & R. G. R. R.	9,661
Do	D. & R. G. R. R.	6,302

Station.	Authority.	Elevation.
		<i>Feet.</i>
Maniton	Hayden	6,357
Marcellina, Mount	Hayden	11,394
Do	Wheeler	11,319
Marleston Peak	Wheeler	10,874
Marmot Peak	Hayden	11,600
Maroon Mountain	Hayden	14,003
Marshall	G. B. & C. R. R.	5,529
Marshall's Pass	Wheeler	10,852
Marshes	D. & R. G. R. R.	6,335
Mary Lake	Toner	9,324
Masonville .....	.....	6,960
Massive Mountain	Hayden	14,298
Do	Timber lineon	11,607
Maysville	D. & R. G. R. R.	8,298
McClellan Mountain	Hayden	13,423
Do	Wheeler	13,842
McClure's Ranch	Wheeler	5,318
McLaughlin's Ranch	Wheeler	9,672
Meadows	D. & R. G. R. R.	4,796
Mears	D. & R. G. R. R.	8,412
Do	Saguache Junction	8,417
Mear's Peak	Wheeler	13,008
Meig's Peak	Wheeler	13,394
Merritt's Ranch	Hayden	7,360
Mesa Verde .....	.....	7,000-8,500
Mesquite Pass	Wheeler	13,308
Middle Boulder .....	.....	8,263
Middle Park (mean elevation) .....	.....	7,500
Midway	D. & R. G. R. R.	7,380
Mill City	Toner	7,836
Mill No. 2	D. & R. G. R. R.	6,009
Mincio	D. & R. G. R. R.	9,319
Mineral City	Wheeler	11,474
Mineral Creek Pass	Hayden	11,098
Mirage	K. P. R. R.	4,841
Missouri City	Parry	9,073
Mitchell's	D. & R. G. R. R.	9,900
Monitor Peak	King	11,270
Montezuma	Whitney	10,295
Do	Wheeler	9,652
Montgomery	Whitney	10,783
Do	Hayden	11,181
Montrose	D. & R. G. R. R.	5,771
Monument	D. & R. G. R. R.	6,953
Morgan, Fort	Med. Dept., U. S. A.	4,500
Morgan's Trading Post .....	.....	6,229
Morley	A., T. & S. F. R. R.	6,746
Morrison, Mount	Hayden	7,900
Mosca .....	.....	7,950
Mosca Pass	Wheeler	9,787
Do	Kans. Pac. R. R. surveys	9,577
Do	Hayden	9,713
Mosquito	Wheeler	10,446
Mosquito Pass	Wheeler	13,308
Muddy Creek Pass	Hayden	8,772
Mule Shoe	D. & R. G. R. R.	8,732
Nada	D. & R. G. R. R.	4,701
Namagua .....	.....	5,224
Nathrop	D. & R. G. R. R.	7,673
Navajo	D. & R. G. R. R.	6,566
Navesink Mountain	King	9,510
Nederland	Hayden	8,263
Needleton	D. & R. G. R. R.	8,118
Nepesta	A., T. & S. F. R. R.	4,354

Station.	Authority.	Elevation.
		<i>Feet.</i>
da City	A., T. & S. F. R. R.	8,809
Mexico Line	A., T. & S. F. R. R.	7,556
Orleans Crossing	D. & R. G. R. R.	5,239
York Ranch	Whitney	7,170
1 Mam	Hayden	11,973
1 Park		8,000-9,000
Creek	D. & R. G. R. R.	5,331
Creek Junction	D. & R. G. R. R.	5,187
Peak	Hayden	11,972
18, Mount	D. & R. G. R. R.	8,167
rn's Lake	Hayden	12,185
Mount	Toner	8,821
	D. & R. G. R. R.	9,615
	Hayden	13,640
	R. V. & B. & C. R. R.	4,392
y	Hayden	7,640
y Mount	Hayden	14,043
1, Mount	Hayden	12,969
rd	A., T. & S. F. R. R.	4,322
da Peak	Hayden	11,251
sa Peak	Wheeler	12,676
Do	Hayden	12,674
sa Springs	Hayden	7,085
Do	Wheeler	7,108
Cone	Hayden	12,021
Dale	D. & R. G. R. R.	5,715
View Peak	Hayden	12,433
Do	Hayden	11,100
ns	D. & R. G. R. R.	7,928
ott City	Hayden	8,633
r's Peak	Parry	13,133
Mountain	Hayden	11,200
, Mount	Hayden	13,004
aus Spring	Hayden	5,650
sburgh	D. & R. G. R. R.	5,302
eon's Peak	Hayden	13,928
e	D. P. R. R.	5,026
s Peak	U. S. Signal Office	14,147
Do	Parry	14,216
Do	U. S. Signal Office	14,134
Do	Hayden	11,720
Creek	D. & R. G. R. R.	8,738
n	D. & R. G. R. R.	5,016
ado Peak	Hayden	13,176
s	Col. Cent. R. R.	7,239
sh, Mount	Hayden	10,392
Do	Wheeler	10,487
sh Peak, Little	Wheeler	10,027
er	D. & R. G. R. R.	8,388
er Iron Mine	D. & R. G. R. R.	8,586
er Iron Mine Junction	D. & R. G. R. R.	8,417
e Mountain	Hayden	9,343
e Pulpit	Hayden	8,000
e Summit	R. V. B. & C. R. R.	5,094
eville	D. P. R. R.	4,812
e Junction	D. & R. G. R. R.	5,385
sant Valley	Wheeler	6,271
Creek Mountain	Wheeler	13,400
ho	D. & R. G. R. R.	7,458
ho, Maysville Junction	D. & R. G. R. R.	7,468
ho Pass	Wheeler	8,945
l Pass	Wheeler	9,848

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Station.	Authority	Elevation.
		<i>Feet.</i>
Post-oak Pass	Palmer	7,475
Powell, Mount	Hayden	13,398
Do	Hayden	11,600
Do	Hayden	14,196
Princeton, Mount	Hayden	14,041
Do	Wheeler	11,500
Do	Hayden	8,893
Prospect Hill	Hayden	9,909
Prospect Peak	Wheeler	3,668
Prowers	A., T. & S. F. R. R.	13,300
Ptarmigan Peak	Hayden	4,689
Pueblo, track at depot	Wheeler	4,689
Do	A., T. & S. F. R. R.	8,250
Puncho Creek, Saw-mill	Wheeler	11,611
Pyramid Peak	Hayden	13,885
Do	Hayden	14,260
Quandary Peak	Hayden	6,212
Quarry	D. & R. G. R. R.	10,719
Rabbit Ears Mountain	Hayden	10,593
Ralston Butte	Hayden	7,893
Raton Pass	Wheeler	4,300
Raynolds, Fort	Wheeler	10,589
Reeen	D. & R. G. R. R.	8,649
Red Cliff	D. & R. G. R. R.	14,092
Red Cloud Peak	Wheeler	12,611
Red Mountain	Wheeler	13,333
Do	Wheeler	11,746
Do	Timber line	12,382
Red Peak	Hayden	7,972
Reed's Ranch	Wheeler	10,400
Rhyolite Peak	Hayden	13,773
Rio Grande Pyramid	Hayden	8,169
Rito Alto	Wheeler	12,969
Rito Alto, Mount	Hayden	12,863
Do	Wheeler	11,817
Do	Timber line on	4,841
River Bend	Kans. Pac. R. R.	8,335
Riverside	Wheeler	8,350
Do	D. & R. G. R. R.	4,509
Roan	D. & R. G. R. R.	8,000 to 8,500
Roan or Book Plateau (crest)	Hayden	10,849
Robinson's	D. & R. G. R. R.	3,977
Robinson	A., T. & S. F. R. R.	8,271
Rock Cliff Post-Office	Wheeler	8,282
Rock Creek	D. & R. G. R. R.	5,412
Rockvale	A., T. & S. F. R. R.	7,345
Rockwood	A., T. & S. F. R. R.	8,508
Rocky Butte	Wheeler	4,160
Rocky Ford	A., T. & S. F. R. R.	8,323
Rollinsville	Hayden	14,340
Rosalie, Mount	Hayden	14,236
Do	Wheeler	8,932
Rosita	Wheeler	8,736
Rosita (sun dial)	Wheeler	9,772
Roubideau's Pass	Pac. R. R. Reports	8,668
Round Hill	D. & R. G. R. R.	8,732
Round Mountain P. O.	Wheeler	12,946
Round Peak	Wheeler	13,750
Rowter, Mount	Ruffner	9,746
Ryan's	D. & R. G. R. R.	7,620
Sagnache	Wheeler	7,745
Do	Hayden	10,807
Saint John's	Whitney	6,167
Saint Mary's	Wheeler	

Station.	Authority.	Elevation.
		<i>Feet.</i>
ary's	Hayden	6,067
ain's	Parry	5,258
Gunnison Junc	D. & R. G. R. R.	7,028
ek	D. & R. G. R. R.	5,442
rks, South Park	D. & S. P. R. R.	8,894
	Whitney	9,008
	Hayden	8,749
los.	D. & R. G. R. R.	4,912
stoval, Lake	Hayden	9,000
ncisco Pass	Palmer	8,560
le Christo	D. & R. G. R. R.	9,042
de Christo Pass	Wheeler	9,578
	U. P. R. R. Surveys	9,186
	Hayden	9,454
bel	Wheeler	7,537
an City	Wheeler	8,901
s de Culebra	Wheeler	7,596
s Lake	Wheeler	7,535
	Hayden	7,592
s Peak	Hayden	14,100
s Valley	Hayden	7,000 to 8,000
uel Lake	Hayden	9,720
lara	D. & R. G. R. R.	6,180
o	D. & R. G. R. R.	7,223
s	D. & R. G. R. R.	8,456
Butte	Hayden	8,600
	D. & R. G. R. R.	5,815
k, Fort	Smithsonian Inst	3,600
	D. & R. G. R. R.	6,210
	D. & R. G. R. R.	4,575
, Mount	Hayden	14,239
ountain	Hayden	12,569
d Mountain	Hayden	12,072
	D. & R. G. R. R.	8,654
lanca, timber line on	Hayden	10,410
Butte	Hayden	8,900
Butte	Wheeler	13,699
	D. & R. G. R. R.	6,660
els, Mount	Hayden	13,697
	Whitney	13,832
... Timber line on	Hayden	11,549
'lume	G. L. & S. J. R. R.	9,074
n	Hayden	9,400
	D. & R. G. R. R.	9,202
, Mount	Wheeler	14,055
Ranch	Wheeler	4,040
reek Pass	Hayden	7,797
ountain	Hayden	12,891
anch	Wheeler	9,257
Hill	Col. Cent. R. R.	7,626
Peak	Hayden	13,093
, Mount	Hayden	14,158
ass Mountain	Hayden	13,970
s Ranch	Wheeler	8,127
orings, Animas Park	D. & R. G. R. R.	6,828
	Hayden	6,853
	D. & R. G. R. R.	6,355
Peak	Hayden	12,823
arkansas P. O	Wheeler	7,383
boulder Peak	Hayden	8,533
'ork	D. & R. G. R. R.	8,166
dam	Hayden	10,897
'ark	Hayden	8,000-10,000
'latte	G. & S. P. R. R.	5,042

Station.	Authority.	Elevation.
		<i>Feet.</i>
South Platte Bridge.....	Wheeler.....	7,978
South Pueblo.....	D. & R. G. R. R.....	4,647
Do..... Union Depot.....	A. T. & S. F. R. R.....	4,639
South River Peak.....	Hayden.....	13,160
Spanish Peaks, E.....	Hayden.....	12,720
Do..... W.....	Hayden.....	13,620
Do..... W.....	Wheeler.....	13,718
Spring Valley.....	.....	6,647
Squaw.....	Hayden.....	11,733
Starkville.....	A. T. & S. F. R. R.....	6,331
Star Ranch.....	Wheeler.....	7,327
Stern's Store.....	Wheeler.....	9,068
Stevens.....	Col. Cent. R. R.....	8,126
Stevens' Mine.....	Hayden.....	11,943
Stewart's Peak.....	Hayden.....	14,032
Do.....	Wheeler.....	14,032
Stormy Peak.....	Hayden.....	9,200
Sugarloaf.....	Hayden.....	8,933
Sultan Mountain.....	Hayden.....	13,366
Do.....	Wheeler.....	13,501
Summit Mines, general level.....	Wheeler.....	11,049
Summit Peak.....	Hayden.....	13,323
Table Mountain (north).....	Hayden.....	6,650
Do..... (south).....	Hayden.....	6,167
Tank Peak.....	King.....	8,929
Tarryall.....	Whitney.....	10,978
Do.....	Hayden.....	10,254
Do.....	Parry.....	9,932
Tarryall Pass.....	Hayden.....	12,176
Tarryall Peak.....	Hayden.....	12,466
Tempus.....	A. T. & S. F. R. R.....	4,407
Tennessee Pass.....	Wheeler.....	10,702
Do.....	Hayden.....	10,418
Teocalli.....	Hayden.....	13,113
Terrible Mine.....	Hayden.....	9,243
Tétons.....	Wheeler.....	14,198
Texas Creek.....	D. & R. G. R. R.....	6,196
Thatcher.....	A. T. & S. F. R. R.....	5,399
Thomas, Mount.....	Wheeler.....	11,496
Thompson's.....	D. & R. G. R. R.....	4,987
Thompson's Park.....	Hayden.....	7,530
Three Point Block.....	Wheeler.....	12,190
Thunder Butte.....	Hayden.....	9,500
Tollgate.....	D. & R. G. R. R.....	8,197
Tollgate, Poncho Creek Road.....	Wheeler.....	8,216
Torrey's Peak.....	Hayden.....	14,336
Do.....	Whitney.....	14,375
Treasury Mountain.....	Hayden.....	13,200
Trinchera.....	D. & R. G. R. R.....	8,082
Trinchera Pass.....	K. P. R. R. surveys.....	7,079
Trinchera Peak.....	Hayden.....	13,546
Do.....	Wheeler.....	13,681
Trinidad.....	Toner.....	5,820
Do.....	A. T. & S. F. R. R.....	5,965
Do..... (astronomical monument).....	Wheeler.....	5,990
Troublesome Peak.....	Hayden.....	11,500
Trout Creek Pass.....	D. & S. P. R. R.....	9,386
Do.....	Hayden.....	9,346
Do.....	Wheeler.....	9,612
Trout Lake.....	Wheeler.....	9,700
Tumichi Dome.....	Hayden.....	11,384
Twin Creek Pass.....	Wheeler.....	8,568
Twin Lakes.....	D. & R. G. R. R.....	9,005

Station.	Authority.	Elevation.
		<i>Feet.</i>
Twin Lakes	Hayden	9,357
Tyrone	A. T. & S. F. R. R	5,518
Uncompahgre	Hayden	6,400
Uncompahgre Peak	Wheeler	14,408
Do	Hayden	14,235
Uncompahgre Plateau (crest)	Hayden	9,000-10,000
Unagna Spring	Hayden	8,141
Union Cross Roads .....	.....	6,287
Union Park	Wheeler	9,655
Utah Line	D. & R. G. R. R.	4,725
Ute Peak (El Laté)	Wheeler	10,152
Do	Hayden	9,884
Ute Peak (Middle Park)	Hayden	11,968
Vallejo	D. & R. G. R. R.	6,200
Valley Station .....	.....	4,500
Vallie	D. & R. G. R. R.	6,513
Valmont	D. & B. V. R. R.	5,172
Varnum's P. O.	Wheeler	7,990
Vasquez Pass .....	.....	11,500
Velic's Peak	Parry	13,456
Venable's Ranch	Wheeler	7,628
Venado Peak	Hayden	12,800
Vernon, Mount	Parry	6,479
Veta Pass	Wheeler	9,494
Villa Grove Depot	D. & R. G. R. R.	7,951
Villa Grove P. O.	Wheeler	8,127
Virginia Peak	Hayden	10,600
Vulcan Crest	Wheeler	13,971
Wagon-wheel Gap	Wheeler	8,372
Do	D. & R. G. R. R.	8,427
Wahatoya	D. & R. G. R. R.	6,482
Walsen's	D. & R. G. R. R.	6,167
Walsen's Mines	D. & R. G. R. R.	6,200
Washington Gulch	Wheeler	10,132
Weavers	D. & R. G. R. R.	4,992
Weeminuche Pass	Hayden	10,670
West Cliff	D. & R. G. R. R.	7,842
West Denver	D. & R. G. R. R.	5,179
West Elk Peak	Hayden	12,920
Weston's Pass	Wheeler	12,109
Wetterhorn	Wheeler	14,069
Whale Peak	Hayden	13,104
Wheeler's	D. & R. G. R. R.	9,759
White Earth Creek P. O.	Wheeler	8,163
Whiteface Peak	Hayden	11,493
Whitehead	King	10,817
White River Agency	Hayden	6,491
White River Plateau	Hayden	11,000-12,000
White Rock Mountain	Hayden	13,357
Do	Hayden	11,919
White Rancho, Huerfano Park	Wheeler	7,469
White Water	D. & R. G. R. R.	4,635
Widefield	D. & R. G. R. R.	5,697
Wigwam	D. & R. G. R. R.	5,211
Wilcox Ranch, Antelope Park	Wheeler	9,000
Wild Flax Pass	Palmer	8,900
Wild Horse	Kans. Pac. R. R.	4,438
Williams, Mount	Hayden	11,413
Willow Creek Pass	Hayden	9,683
Wilson, Mount	Hayden	14,280
Do	Wheeler	14,309
Wilson's	Col. Cent. R. R.	7,481
Wood Valley .....	.....	5,533

Station.	Authority.	Elevation.
		<i>Feet.</i>
Wray	R. V. & B. & C. R. R.	3,519
Yale, Mount.....	Hayden	14,187
Do.....	Whitney	14,263
Do.....	Wheeler.....	14,121
Yampa Peak	King	8,022
Yellow Jacket Pass.....	Hayden	7,493
Yellow Peak	Wheeler.....	13,618
Zenobia Peak	King	9,297
Zirkel Mountain	King	12,126

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CONNECTICUT.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Avon	N. H. & Northampton R. R. ..	242
Berlin	N. Y., N. H. & Htfd R. R.	63
Berlin, junction with Middletown R. R.	N. Y., N. H. & Htfd R. R.	64
Bridgeport, bridge near R. R. depot	U. S. C. & G. S.	7
Do.....station, junction with Housatonic R. R.	N. Y. & N. H. R. R.	9
Brookfield	Housatonic R. R.	338
Canaan	Housatonic R. R.	627
Carmel Mountain.....	U. S. C. & G. S.	739
Cheshire.....	N. H. & Northampton R. R.	166
Congamond Lakes.....	N. H. & Northampton R. R.	227
East Rock	U. S. C. & G. S.	362
Danbury, D. & N. R. R.	Bost. & N. Y. R. R.	397
Farmington.....	N. H. & Northampton R. R.	204
Granby	N. H. & Northampton R. R.	204
Great Rock or Rabbit Rock	U. S. C. & G. S.	376
Hartford.....	N. Y., N. H. & Htfd R. R.	39
Hawleyville	Housatonic R. R.	306
Hickox	U. S. C. & G. S.	651
Joshua Station	U. S. C. & G. S.	608
Lakeville	Conn. Western R. R.	670
Meriden	N. Y., N. H. & Htfd R. R.	131
Middletown.....	N. Y., N. H. & Htfd R. R.	23
Mount Carmel	N. H. & Northampton R. R.	114
Mystic	N. Y., Prov. & Boston R. R.	7
New Britain	N. Y., N. H. & Htfd R. R.	179
New Hartford.....	Conn. Western R. R.	389
New Haven, Chapel street Bridge.....	U. S. C. & G. S.	6
Do.....State street Bridge.....	U. S. C. & G. S.	11
Do.....New Road.....	U. S. C. & G. S.	34
Do.....large granite post in green	U. S. C. & G. S.	30
Do.....	N. Y., N. H. & Htfd R. R.	10
Do.....Sheffield Scientific school	U. S. C. & G. S.	38
Do.....& Shoreline Junction.....	N. Y., N. H. & Htfd R. R.	20
Do.....Signal Station.....	U. S. Signal Office	106
New London	N. Y., N. H. & Htfd R. R.	9
Do.....Signal Station.....	U. S. Signal Office	47
New Milford	Housatonic R. R.	224
New Rochelle Junction.....	N. Y., N. H. & Htfd R. R.	82
Noank	N. Y., Prov. & Boston R. R.	14
Norfolk	Conn. Western R. R.	1,220
Norwalk Station, Junction with Danbury R. R.	N. Y. & N. H. R. R.	25
Norwich, Main St	New London Northern R. R.	7
Plainfield	Htfd., Prov. & Fishkill R. R.	162
Plainville	N. H. & Northampton R. R.	191
Poquonock.....	N. Y., Prov. & Boston R. R.	8
Saybrook, junction with Connecticut Valley R. R.	N. Y., N. H. & Htfd R. R.	24
Simsbury	N. H. & Northampton R. R.	167
Southington	N. H. & Northampton R. R.	152

Station.	Authority.	Elevation.
		<i>Feet.</i>
Stamford	N. Y. & N. H. R. R.	12
Thompson, E. So. Bridge R. R.	Bost. & N. Y. R. R.	483
Vernon, Rockville Branch	Bost. & N. Y. R. R.	242
Waterbury	Htfd., Prov. & Fishkill R. R.	260
West Mystic	N. Y., Prov. & Bost. R. R.	0
West Rock	U. S. C. & G. S.	405
West Winsted	Conn. Western R. R.	720
Willimantic	Htfd., Prov. & Fishkill R. R.	233
Windsor Locks	N. Y., N. H. & Htfd. R. R.	40

DAKOTA.

Station.	Authority.	Elevation.
		<i>Feet.</i>
am Lincoln, Fort		2,211
r	Dak. Cent. R. R.	1,355
nt	C. N. W. R. R.	1,834
Creek Valley	N. P. R. R.	1,711
	C. & N. W. R. R.	1,630
		1,221
	N. P. R. R.	2,577
t, Fort, Signal Station	U. S. Signal Office	1,440
rd	Dak. Cent. R. R.	1,505
d, Fort		1,873
ux River, water 2d crossing	C. M. & St. P. R. R.	1,479
ck	N. P. R. R.	1,668
Signal Station	U. S. Signal Office	1,677
Mo. River, low water	N. P. R. R.	1,616
ake	Fargo & S. W. R. R.	1,965
s Sioux	Toner	1,039
l Lake	Nicollet	1,860
aga.	C. & N. W. R. R.	1,636
Fort	Smithsonian Inst	2,017
Signal Station	U. S. Signal Office	1,876
k	S. C. & D. R. R.	1,153
ta	Dak. Cent. R. R.	1,555
	Dak. Cent. R. R.	1,525
	S. C. & D. R. R.	1,291
go	Dak. Cent. R. R.	1,440
on	N. P. R. R.	930
	C. & N. W. R. R.	1,311
ville	Dak. Cent. R. R.	1,233
entre	Dak. Cent. R. R.	1,785
Fort	Petermann	1,827
nd	N. P. R. R.	1,840
du Missouri		1,800-2,000
des Prairies		1,500-1,800
Depot	Fargo & S. W. R. R.	909
Tower	Jenny	7,600
ort Depot	Fargo & S. W. R. R.	921
unction	S. C. & D. R. R.	1,130
od, Signal Station	U. S. Signal Office	4,630
t	C. & N. W. R. R.	1,726
on	N. P. R. R.	2,403
Lake	Thomas	1,467
	Dak. Cent. R. R.	1,355
	N. P. R. R.	1,835
	S. C. & P. R. R.	1,239
	C. M. & St. P. R. R.	1,510
int.	S. C. & D. R. R.	1,142
Lake (station)	N. P. R. R.	1,447
Lake, water	N. P. R. R.	1,432
	Dak. Cent. R. R.	1,430
w	C. & N. W. R. R.	1,542
	S. C. & D. R. R.	1,231
	N. P. R. R.	903
ake, water	St. P. & S. C. R. R.	1,320
au	C. M. & St. P. R. R.	1,550
ort	Dak. Cent. R. R.	1,296
	C. & N. W. R. R.	1,484
le	S. C. & D. R. R.	1,178

Station.	Authority.	Elevation.
		<i>Feet.</i>
Stamford	N. Y. & N. H. R. R.	12
Thompson, E. So. Bridge R. R.	Bost. & N. Y. R. R.	483
Vernon, Rockville Branch	Bost. & N. Y. R. R.	242
Waterbury	Htfd., Prov. & Fishkill R. R.	260
West Mystic	N. Y., Prov. & Bost. R. R.	0
West Rock	U. S. C. & G. S.	405
West Winsted	Conn. Western R. R.	720
Willimantic	Htfd., Prov. & Fishkill R. R.	233
Windsor Locks	N. Y., N. H. & Htfd. R. R.	40

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DAKOTA.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Abraham Lincoln, Fort.....		2,211
Alcester.....	Dak. Cent. R. R.....	1,355
Altamont.....	C. N. W. R. R.....	1,834
Apple Creek Valley.....	N. P. R. R.....	1,711
Aurora.....	C. & N. W. R. R.....	1,630
Anstrin.....		1,221
Belfield.....	N. P. R. R.....	2,577
Bennett, Fort, Signal Station.....	U. S. Signal Office.....	1,440
Beresford.....	Dak. Cent. R. R.....	1,505
Berthold, Fort.....		1,873
Big Sioux River, water 2d crossing.....	C. M. & St. P. R. R.....	1,479
Bismarck.....	N. P. R. R.....	1,668
Do.....Signal Station.....	U. S. Signal Office.....	1,677
Do.....Mo. River, low water.....	N. P. R. R.....	1,616
Blue Lake.....	Fargo & S. W. R. R.....	1,965
Bois des Sioux.....	Toner.....	1,039
Brochel Lake.....	Nicollet.....	1,860
Brookings.....	C. & N. W. R. R.....	1,636
Buford, Fort.....	Smithsonian Inst.....	2,017
Do.....Signal Station.....	U. S. Signal Office.....	1,876
Burbank.....	S. C. & D. R. R.....	1,153
Canistota.....	Dak. Cent. R. R.....	1,555
Canova.....	Dak. Cent. R. R.....	1,525
Canton.....	S. C. & D. R. R.....	1,291
Carthage.....	Dak. Cent. R. R.....	1,440
Casselman.....	N. P. R. R.....	930
Cavour.....	C. & N. W. R. R.....	1,311
Centerville.....	Dak. Cent. R. R.....	1,233
Clark Centre.....	Dak. Cent. R. R.....	1,785
Clark, Fort.....	Petermann.....	1,827
Cleveland.....	N. P. R. R.....	1,840
Coteau du Missouri.....		1,800-2,000
Coteau des Prairies.....		1,500-1,800
Cotters Depot.....	Fargo & S. W. R. R.....	909
Crook's Tower.....	Jenny.....	7,600
Davenport Depot.....	Fargo & S. W. R. R.....	921
Davis Junction.....	S. C. & D. R. R.....	1,130
Deadwood, Signal Station.....	U. S. Signal Office.....	4,630
De Smet.....	C. & N. W. R. R.....	1,726
Dickinson.....	N. P. R. R.....	2,403
Devil's Lake.....	Thomas.....	1,467
Doland.....	Dak. Cent. R. R.....	1,355
Driscoll.....	N. P. R. R.....	1,835
Eden.....	S. C. & P. R. R.....	1,239
Egan.....	C. M. & St. P. R. R.....	1,510
Elk Point.....	S. C. & D. R. R.....	1,142
Eskelon Lake (station).....	N. P. R. R.....	1,447
Eskelon Lake, water.....	N. P. R. R.....	1,432
Esmond.....	Dak. Cent. R. R.....	1,430
Fairview.....	C. & N. W. R. R.....	1,542
Do.....	S. C. & D. R. R.....	1,231
Fargo.....	N. P. R. R.....	903
Fawn Lake, water.....	St. P. & S. C. R. R.....	1,320
Flandreau.....	C. M. & St. P. R. R.....	1,550
Frankfort.....	Dak. Cent. R. R.....	1,296
Gary.....	C. & N. W. R. R.....	1,484
Gayville.....	S. C. & D. R. R.....	1,178

Station.	Authority.	Elevation.
		<i>Feet.</i>
Gladstone.....	N. P. R. R.....	2,346
Glennullin.....	N. P. R. R.....	2,070
Goodwin.....	C. & N. W. R. R.....	1,396
Greenwood.....	Smithsonian Inst.....	1,900
Harney's Peak.....	Ludlow.....	9,700
Hartford Siding.....	St. P. & S. C. R. R.....	1,561
Hawarden.....	Dak. Cent. R. R.....	1,182
Henry.....	Dak. Cent. R. R.....	1,810
Herman.....	C. M. & St. P. R. R.....	1,654
Herman, Lake.....	C. M. & St. P. R. R.....	1,646
Horace Depot.....	Fargo & S. W. R. R.....	917
Hurley.....	Dak. Cent. R. R.....	1,272
Huron.....	C. & N. W. R. R.....	1,285
Huron Junction.....	C. & N. W. R. R.....	1,312
Iroquois.....	C. & N. W. R. R.....	1,401
Jamestown.....	N. P. R. R.....	1,395
Jefferson.....	S. C. & D. R. R.....	1,130
Kampeska, Lake.....	C. & N. W. R. R.....	1,650
Kampeska, Lake, water.....	C. & N. W. R. R.....	1,714
Kamskusahkee Lake.....	P. R. R. Reports.....	2,431
Kranzburg.....	C. & N. W. R. R.....	1,982
Little Missouri.....	N. P. R. R.....	2,255
Little Missouri Buttes.....	Jenney.....	5,500
McCook.....	S. C. & D. R. R.....	1,123
McKenzie.....	N. P. R. R.....	1,696
Madison Lake.....	C. M. & St. P. R. R.....	1,576
Mandan.....	N. P. R. R.....	1,644
Mapleton.....	N. P. R. R.....	903
Meckling.....	S. C. & D. R. R.....	1,167
Millbank Junction.....	C. M. & St. P. R. R.....	1,149
Montrose Siding.....	St. P. & S. C. R. R.....	1,471
New Buffalo.....	N. P. R. R.....	1,206
New Madison.....	C. M. & St. P. R. R.....	1,646
Noreland.....	C. & N. W. R. R.....	1,846
Oakwood Settlement.....	Nicollet.....	1,341
Oriska.....	N. P. R. R.....	1,240
Parker.....	Dak. Cent. R. R.....	1,340
Pembina, Signal Station.....	U. S. Signal Office.....	791
Pierre.....	C. & N. W. R. R.....	1,438
Pierre, Fort.....	Med. Dep't, U. S. A.....	1,456
Preston, Lake.....	C. & N. W. R. R.....	1,696
Randall, Fort.....	Med. Dep't, U. S. A.....	1,245
Ransom, Fort.....	Med. Dep't, U. S. A.....	1,438
Richardson.....	N. P. R. R.....	2,464
Richland.....		1,247
Salem.....	St. P. & S. C. R. R.....	1,517
Sanborn.....	N. P. R. R.....	1,460
Sedalia.....	N. P. R. R.....	2,030
Sentinel Butte.....	N. R. R. R.....	2,707
Sheyenne River.....	N. P. R. R.....	1,200
Sims.....	N. P. R. R.....	1,960
Sioux Falls.....	S. C. & D. R. R.....	1,411
Do.....	C. M. & St. P. R. R.....	1,638
Do.....	St. P. & S. C. R. R.....	1,387
Sioux Falls Junction.....	C. M. & St. P. R. R.....	1,496
South Heart.....	N. P. R. R.....	2,470
Spiritwood.....	N. P. R. R.....	1,477
Square House.....		2,120
Steele.....	N. P. R. R.....	1,857
Stevenson, Fort, Signal Station.....	U. S. Signal Office.....	1,734
Sully, Fort.....	U. S. Signal Office.....	1,688
Sully Spring.....	N. P. R. R.....	2,647
Tappen.....	N. P. R. R.....	1,760

Station.	Authority.	Ele
Totten, Fort	Thorne	
Union, Fort	Toner	
Valley City	N. P. R. R	
Valley Springs	St. P. & S. C. R. R	
Vermillion	S. C. & D. R. R	
Vilas	Dak. Cent. R. R	
Virginia	S. C. & D. R. R	
Volga	C. & N. W. R. R	
Wadsworth, Fort		
Do	Smithsonian Inst	
Warren's Peak	Jenney	
Watertown	Dak. Cent. R. R	
Wheatland	N. P. R. R	
Yankton	S. C. & D. R. R	
Do .. Agency	Smithsonian Inst	
Do .. Signal Station	U. S. Signal Office	

DELAWARE.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Bellevue	P. W. & B. R. R.	14
Bridgeville	D. R. R.	55
Canterbury	D. R. R.	69
Centre	W. & R. R. R.	263
Chesapeake and Delaware Canal Crossing	D. R. R.	* 61
Claymont	P. W. & B. R. R.	30
Clayton	D. R. R.	45
Delaware Breakwater, Signal Station.	U. S. Signal Office.	20
Delaware City	Pa. & Del. R. R.	16
Delmar	E. S. R. R.	32
Dover	D. R. R.	39
Dupont's	W. & R. R. R.	262
Georgetown	J. & B. R. R.	52
Harrington	D. R. R.	63
Holly Oak	P. W. & B. R. R.	10
Lewes	J. & B. R. R.	9
Middletown	D. R. R.	66
Milford	J. & B. R. R.	15
Newark	P. W. & B. R. R.	106
Do., crossing of the Delaware R. R.	Pa. & Del. R. R.	118
Newport	P. W. & B. R. R.	21
Oak Grove	D. & D. R. R.	97
Rodney, junction with New Castle and French Town R. R.	D. R. R.	87
Ross	D. R. R.	42
Staunton	P. W. & B. R. R.	17
Townsend	D. R. R.	71
Wilmington	P. W. & B. R. R.	7

DISTRICT OF COLUMBIA.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Capitol, dome.....	U. S. C. & G. S.....	379. 00
Do..east front, ground in front of central steps.....	U. S. C. & G. S.....	89. 00
Caustin, ground at Δ.....	U. S. C. & G. S.....	386. 00
Coast Survey Office, top of roof at flagstaff.....	U. S. C. & G. S.....	137. 00
Do..... floor of vestibule.....	U. S. C. & G. S.....	78. 00
Georgetown College, observatory.....	U. S. C. & G. S.....	209. 00
Insane Asylum, U. S., top of balustrade on tower.....	U. S. C. & G. S.....	255. 00
Insane Asylum, U. S., ground at north front of tower.....	U. S. C. & G. S.....	173. 00
Naval Observatory, U. S., top of small dome.....	U. S. C. & G. S.....	150. 00
Navy-yard, bridge, curbstone east end, B. M. No.2.....	U. S. C. & G. S.....	8. 00
Navy-yard, tide gauge.....	U. S. C. & G. S.....	0. 27
Do B. M.....	U. S. C. & G. S.....	5. 00
Do platform foot of flagstaff.....	U. S. C. & G. S.....	39. 00
Smithsonian Institution, top of balustrade on highest tower.....	U. S. C. & G. S.....	175. 00
Smithsonian Institution, ground north front of tower.....	U. S. C. & G. S.....	34. 00
Soldiers' Home, top of old balustrade.....	U. S. C. & G. S.....	410. 00
Do foot of tower, south side...	U. S. C. & G. S.....	330. 00

FLORIDA.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Anthony Place	A. G. & W. I. T. R. R.	72
Archer	A. G. & W. I. T. R. R.	80
Arredonda	A. G. & W. I. T. R. R.	70
Baldwin Junction	A. G. & W. I. T. R. R.	47
Barton	A. G. & W. I. T. R. R.	75
Bronson	A. G. & W. I. T. R. R.	27
Callahan	A. G. & W. I. T. R. R.	30
Cedar Key	A. G. & W. I. T. R. R.	10
Do ....Signal Station.....	U. S. Signal Office.....	22
Dutton	A. G. & W. I. T. R. R.	45
Fernandina	A. G. & W. I. T. R. R.	10
Gainesville	A. G. & W. I. T. R. R.	128
Hawthorne	A. G. & W. I. T. R. R.	150
Highland, Trail Ridge, summit of R. R.	A. G. & W. I. T. R. R.	210
Jacksonville, Signal Station.....	U. S. Signal Office.....	43
Key West, Signal Station	U. S. Signal Office.....	27
Lawtey	A. G. & W. I. T. R. R.	140
Lochloosa	A. G. & W. I. T. R. R.	53
Maxville	A. G. & W. I. T. R. R.	87
Ocala	A. G. & W. I. T. R. R.	100
Orange Lake	A. G. & W. I. T. R. R.	53
Pensacola, Signal Station	U. S. Signal Office.....	30
Punta Rassa, Signal Station	U. S. Signal Office.....	13
Rose Wood	A. G. & W. I. T. R. R.	12
Santa Fé	A. G. & W. I. T. R. R.	150
Silver Spring	A. G. & W. I. T. R. R.	32
Starke	A. G. & W. I. T. R. R.	150
Thurston	A. G. & W. I. T. R. R.	140
Waldo	A. G. & W. I. T. R. R.	150

GEORGIA.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Mountain	U. S. C. & G. S.	1, 136
.....	W. & A. R. R.	926
.....	W. & A. R. R.	710
Station	B. & A. R. R.	267
.....	S. W. R. R.	232
.....	B. & A. R. R.	168
ountain	U. S. C. & G. S.	1, 090
.....	Ga. R. R.	721
level low water in Alcovy River	Ga. R. R.	654
.....	W. & A. R. R.	878
.....	S. W. R. R.	362
ville	S. W. R. R.	396
.....	Ga. R. R.	778
.....	Ga. R. R.	694
.....	Ga. R. R.	1, 050
.....	M. & W. R. R.	1, 050
.....	W. & A. R. R.	1, 050
.....	A. & R. A. L. R. R.	1, 050
ignal station	U. S. Signal Office	1, 131
.....	Ga. R. R.	134
ignal station	U. S. Signal Office	183
e	M. & W. R. R.	875
.....	Ga. R. R.	647
.....	W. & A. R. R.	845
.....	M. & B. R. R.	210
l	C. & R. R. R.	387
.....	Ga. R. R.	309
.....	A. & R. R. R.	1, 342
.....	Ga. R. R.	502
.....	W. & A. R. R.	750
y	W. & A. R. R.	1, 100
ountain	U. S. C. & G. S.	4, 463
.....	W. & A. R. R.	850
le	Elberton R. R.	934
.....	Elberton R. R.	796
l	B. & A. R. R.	303
tation	S. W. R. R.	371
.....	M. & B. R. R.	14
.....	Ga. R. R.	620
.....	A. & R. A. L. R. R.	1, 207
.....	M. & B. R. R.	265
Roost	M. & B. R. R.	240
.....	W. & A. R. R.	657
.....	Ga. R. R.	592
ek Ridge	S. W. R. R.	308
.....	M. & N. G. R. R.	894
about bed of Etowah River	M. & N. G. R. R.	859
ower Mountain, Atlanta	U. S. C. & G. S.	1, 163
.....	Ga. R. R.	507
le	W. & A. R. R.	760
.....	W. & A. R. R.	765
.....	C. & R. R. R.	692
ngs	S. R. & D. R. R.	672
.....	N. E. R. R.	550
.....	M. & B. R. R.	303
.....	Ga. R. R.	1, 012
o C. H.	U. S. C. & G. S.	1, 478
Church	U. S. C. & G. S.	1, 616

Station.	Authority.	Elevation.
		<i>Feet.</i>
Cochran	M. & B. R. R.	341
Cohutta Mountain	U. S. C. & G. S.	4,155
Colman's	S. W. R. R.	393
Columbus	C. & R. R. R.	262
Concord	R. R. surveys	804
Conyers	Ga. R. R.	894
Covington	Ga. R. R.	748
Do level low water in Yellow River	Ga. R. R.	608
Crawfordville	Ga. R. R.	603
Culloden	R. R. surveys	696
Culverton	Ga. R. R.	558
Cumming	U. S. C. & G. S.	1,316
Currahee Mountain	U. S. C. & G. S.	1,740
Cuthbert Depot	S. W. R. R.	448
Dademont	Ala. G. S. R. R.	832
Dahlonaga, Agricultural College	U. S. C. & G. S.	1,519
Dalton	S. R. & D. R. R.	757
Davis	B. & A. R. R.	207
Davisborough	C. R. R.	291
Dawson	S. W. R. R.	354
Dearing	Ga. R. R.	478
Decatur	Ga. R. R.	1,033
Deveraux	Ga. R. R.	569
Dome Mountain	U. S. C. & G. S.	4,042
Dormille	A. & R. A. L. R. R.	1,098
Dry Pond	A. & R. A. L. R. R.	1,032
Du Bois	M. & B. R. R.	394
Duluth	A. & R. A. L. R. R.	1,107
East Macon	C. R. R.	297
Eastman	M. & B. R. R.	362
East Point	A. & W. P. R. R.	1,043
Eden	C. R. R.	34
Egypt	C. R. R.	126
Elberton	Elberton R. R.	706
Emmit	C. R. R.	210
Enota Mountain	U. S. C. & G. S.	4,798
Fairburn	A. & W. P. R. R.	1,034
Fair Grounds	W. & A. R. R.	979
Fellowship Church	Elberton R. R.	857
Fodder's Bald Mountain	Guyot	4,821
Forrest	Ga. R. R.	511
Forsyth	M. & W. R. R.	735
Fort Gaines Depot	S. W. R. R.	166
Do Bridge	S. W. R. R.	192
Fortsons	C. & R. R. R.	522
Fort Valley	S. W. R. R.	530
Fosterville	M. & W. R. R.	960
Gainesville	A. & R. A. L. R. R.	1,227
Gillsville	N. E. R. R.	1,052
Gilmore	W. & A. R. R.	903
Goodwin	A. & R. A. L. R. R.	975
Gordon	Cent. R. R.	343
Goss Store	Elberton R. R.	727
Graham	M. & B. R. R.	250
Grantville	A. & W. P. R. R.	860
Grassy Mountain	U. S. C. & G. S.	3,290
Graysville	W. & A. R. R.	706
Greensboro Depot	U. S. C. & G. S.	611
Do	Ga. R. R.	612
Griffin	M. & W. R. R.	975
Griswold	Cent. R. R.	464
Guyton	Cent. R. R.	77
Haddocks	Ga. R. R.	487
Halcyondale	Cent. R. R.	110

Station.	Authority.	Elevation.
		<i>Feet.</i>
Halls	W. & A. R. R	771
Hamilton	C. & R. R. R	786
Harbers	S. R. & D. R. R	648
Harlem	Ga. R. R	562
Harmony Grove	N. E. R. R	954
Hawkinsville	M. & B. R. R	235
Hazlehurst	M. & B. R. R	261
Herndon	Cent. R. R	174
Hines	C. & R. R. R	592
Hogansville	A. & W. P. R. R	731
Holly Springs	M. & N. G. R. R	1, 114
Hood	C. & R. R. R	912
Isabella	B. & A. R. R	340
Jesup	M. & B. R. R	100
Jonesboro	M. & W. R. R	905
Keenesaw	U. S. C. & G. S	1, 809
Kingsboro	C. & R. R. R	612
Kingston	W. & A. R. R	710
Knoxville	R. R. surveys	640
Lavonia	Elberton R. R	865
Lawrenceville	L. B. R. R	1, 062
La Grange	A. & W. P. R. R	742
Lexington	Ga. R. R	770
Lithonia	Ga. R. R	937
Long Cane	A. & W. P. R. R	624
Lula	N. E. R. R	1, 334
Lumber City	M. & B. R. R	150
McDaniels	W. & A. R. R	663
McDonald	Cent. R. R	245
McIvors	W. & A. R. R	965
McPherson Barracks	U. S. C. & G. S	1, 078
McRae	M. & B. R. R	148
McVille	M. & B. R. R	148
Macon	M. & B. R. R	334
Madison	Ga. R. R	681
Marietta	M. & N. G. R. R	1, 133
Marshallville	D. W. R. R	493
Martins	Elberton R. R	917
Maxeys	Ga. R. R	742
Mayfield	Ga. R. R	402
Maysville	N. E. R. R	1, 001
Messena	Ga. R. R	559
Milledgeville	Ga. R. R	310
Millen	Cent. R. R	158
Millwood	B. & A. R. R	130
Milner	M. & W. R. R	863
Mona	U. S. C. & G. S	5, 039
Morris Station	S. W. R. R	244
Mount Airy	A. & R. A. L. R. R	1, 587
Mud Creek Bald Mountain	Guyot	4, 705
Nances	C. & R. R. R	537
New Holland	A. & R. A. L. R. R	1, 182
Newnan	A. & W. P. R. R	959
Nicholson	N. E. R. R	893
Nochway Bridge	S. W. R. R	294
Noonday Valley	M. & N. G. R. R	949
Norcross	A. & R. A. L. R. R	1, 078
Norwood	Ga. R. R	602
Oconee	Ga. R. R	447
Do level low water in Oconee River	Ga. R. R	412
Ogeechee	C. R. R	106
Oglethorpe	S. W. R. R	301
Opelika	S. W. R. R	810

Station.	Authority.	Elevation.
		<i>Feet.</i>
Palmetto.....	A. & W. P. R. R.....	1,025
Paramore Hill.....	Cent. R. R.....	233
Peach.....	U. S. C. & G. S.....	1,068
Pearson.....	B. & A. R. R.....	175
Pendarvis.....	M. & B. R. R.....	90
Pine Log Mountain.....	U. S. C. & G. S.....	2,340
Pine Mountain.....	C. & R. R. R.....	1,052
Powells.....	A. & W. P. R. R.....	987
Prattville.....	M. & W. R. R.....	625
Pirors.....	S. R. & D. R. R.....	819
Pucketta.....	A. & W. P. R. R.....	939
Rabunor, Mud Creek Bald Mountain.....	U. S. C. & G. S.....	4,717
Red Oak.....	A. & W. P. R. R.....	1,085
Reid.....	M. & B. R. R.....	281
Reesaca.....	W. & A. R. R.....	654
Rich Hill.....	R. R. surveys.....	619
Ridge.....	U. S. C. & G. S.....	1,070
Ringgold.....	W. & A. R. R.....	785
Rising Fawn.....	Ala. G. S. R. R.....	797
Riverside.....	B. & A. R. R.....	255
Rives.....	S. R. & D. R. R.....	633
Roberts.....	Ga. R. R.....	548
Rogers.....	W. & A. R. R.....	734
Rome.....	S. R. & D. R. R.....	627
Rough and Ready.....	M. & W. R. R.....	1,004
Roystons.....	Elberton R. R.....	909
Ruffs.....	W. & A. R. R.....	1,080
Rutledge.....	Ga. R. R.....	725
Sand Hill.....	M. & B. R. R.....	59
Satilla.....	M. & B. R. R.....	159
Savannah, Depot.....	Cent. R. R.....	32
Do..... Signal Station.....	U. S. Signal Office.....	87
Sawdust.....	Ga. R. R.....	536
Sawnee.....	U. S. C. & G. S.....	1,967
Scarborough.....	Cent. R. R.....	148
Seagos.....	S. W. R. R.....	362
Sebastopol.....	Cent. R. R.....	190
Sewall's Cut.....	W. & A. R. R.....	1,166
Sitting Bull Mountain.....	U. S. C. & G. S.....	5,046
Six Mile.....	S. R. & D. R. R.....	684
Skitt Mountain.....	U. S. C. & G. S.....	2,076
Smithville.....	S. W. R. R.....	334
Smyrna.....	W. & A. R. R.....	1,069
Social Circle.....	Ga. R. R.....	875
South Mountain.....	Ga. R. R.....	1,040
Sparta.....	Ga. R. R.....	567
Spears.....	Cent. R. R.....	238
Stegalls.....	W. & A. R. R.....	846
Sterling.....	M. & B. R. R.....	23
Stone Mountain.....	U. S. C. & G. S.....	1,686
Stone Village.....	U. S. C. & G. S.....	1,037
Sulphur Spring.....	A. & R. A. L. R. R.....	1,252
Sulphur Springs.....	Ala. G. S. R. R.....	907
Sumner.....	B. & A. R. R.....	340
Surrency.....	M. & B. R. R.....	192
Suwannee.....	L. B. R. R.....	1,027
Sweat Mountain.....	U. S. C. & G. S.....	1,694
Tallulah, S. E. Summit.....	U. S. C. & G. S.....	2,849
Do..... N. W. Summit.....	U. S. C. & G. S.....	3,172
Thomson.....	Ga. R. R.....	517
Tilton.....	W. & A. R. R.....	665
Toccoa.....	Elberton R. R.....	1,040
Tonah Mountain.....	U. S. C. & G. S.....	3,168
Tooni.....	M. & N. G. R. R.....	1,035

Station.	Authority.	Elevation.
		<i>Feet.</i>
Towns	M. & B. R. R.	135
Tray Mountain	U. S. C. & G. S.	4,404
Do	Guyot	4,428
Tree	U. S. C. & G. S.	1,045
Trenton	Ala. G. S. R. R.	739
Tugaloo	A. & R. A. L. R. R.	650
Tunnel Hill	W. & A. R. R.	853
Union Point	Ga. R. R.	658
Vernon	A. C. R. R.	178
Vining Station	W. & A. R. R.	951
Walker Mountain	U. S. C. & G. S.	2,593
Ward's Station	S. W. R. R.	394
Waresboro'	B. & A. R. R.	117
Warrenton	Ga. R. R.	506
Way Cross	B. & A. R. R.	100
West Bowersville	Elberton R. R.	916
West Point	A. & W. P. R. R.	584
Whitfield	A. & W. P. R. R.	757
Willacoochee	B. & A. R. R.	220
Winchester	S. W. R. R.	465
Winters	Ga. R. R.	800
Woodstock	M. & N. G. R. R.	987
Woodville	Ga. R. R.	707
Youah	U. S. C. & G. S.	3,167

IDAHO.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Algoma	N. P. R. R.	2,214
American Falls	Wheeler	4,457
Anderson's	Wheeler	4,422
Antelope Peak	Wheeler	7,222
Ariomo	U. & N. R. R.	4,659
Badger Peak	Wheeler	6,329
Bannock Peak	Wheeler	8,359
Battle Creek	U. & N. R. R.	4,500
Bear Lake	Wheeler	5,960
Bear River Bridge	Hayden	5,744
Beaver Cañon Stage Station	Pre. R. R. levels	5,925
Beer Springs	Hayden	5,529
Do	Lander	5,650
Bennington	Hayden	5,708
Do	Wheeler	6,132
Big Butte	Wheeler	7,659
Blackfoot	U. & N. R. R.	4,515
Blackfoot Fork, Bridge	Hayden	4,456
Blackfoot Peak	Hayden	7,490
Blackfoot Stage Station	Wheeler	4,447
Black Pine Mountain	Wheeler	9,386
Black Rock Stage Station	Wheeler	4,569
Bloomington	Wheeler	6,076
Do	Hayden	5,925
Bloomington Peak	Wheeler	9,354
Boisé City, Signal Station	U. S. Signal Office	2,768
Boisé, Fort. ....	.....	1,998
Cache Peak	Wheeler	10,451
Camas Creek Ranch	Hayden	4,722
Caribou Mountain	Hayden	9,854
Carpenter's Station	Hayden	4,666
Castle Rock	Wheeler	9,610
Cedar Peak	Wheeler	7,587
Chilco	N. P. R. R.	2,450
Citadel Peak	King	6,700
Clarkston	Wheeler	4,853
Clifton	Wheeler	4,926
Do	Hayden	4,893
Coeur d'Aléne Lake	Mullan	2,150
Do	Pacific R. R. Reports	2,240
Coeur d'Aléne Mission	Pacific R. R. Reports	2,220
Crater Buttes, mouth Henry's Fork	Hayden	} E. 5,638 W. 5,425
Curlw	Wheeler	
Deep Creek Mountain	Wheeler	4,397
Desert Wells	Hayden	8,818
Devil's Corral	Hayden	4,816
Dry Creek Station	Wheeler	3,601
Eagle Peak	Hayden	5,689
Eagle Rock	Mullan	7,500
Eagle Rock, Signal Station	U. & N. R. R.	4,723
East Malade Mountain	U. S. Signal Office	4,781
Elkhorn Mail Station	Hayden	9,332
Elkhorn Village	Wheeler	4,998
Emigrant Springs	Wheeler	4,950
Fish Haven	Wheeler	5,271
Do	Wheeler	5,963
Florence	Hayden	5,932
		8,000

Station.	Authority.	Elevation.
		<i>Feet.</i>
Fly Spring.....	Wheeler.....	5,912
Fountain Peak (north side).....	Wheeler.....	8,900
Fountain Spring.....	Wheeler.....	5,235
Franklin.....	U. & N. R. R.....	4,513
Do.....	Wheeler.....	4,585
Do.....	Hayden.....	4,516
Garfield, Mount.....	Hayden.....	9,704
Georgetown.....	Wheeler.....	6,019
Do.....	Hayden.....	5,800
Georgetown Peak.....	Hayden.....	8,466
Granite.....	N. P. R. R.....	2,290
Hall, Fort (10 feet below adjutant's office).....	Wheeler.....	4,752
Do.....	Hayden.....	4,754
Hall, Fort (old).....		4,500
Hall.....	De Lacy.....	4,996
Harkness's Toll Gate.....	Wheeler.....	4,802
Henry's Lake.....	Hayden.....	6,443
Higham's Ranch.....	Hayden.....	4,601
Hitching's Ranch.....	Wheeler.....	5,205
Junction Station.....	Hayden.....	6,329
Kalpelm, Lake.....	Toner.....	2,093
Keenam City.....	Wheeler.....	6,641
Keeney's Stage Station.....	Hayden.....	4,933
Lane's Butte.....	Wheeler.....	7,823
Lane's Ranch, Marsh Lake.....	Wheeler.....	4,323
Liberty.....	Hayden.....	6,060
Do.....	Wheeler.....	6,105
Lone Cone.....	Hayden.....	9,246
McCrae's Ranch.....	Wheeler.....	4,331
Malade City.....	Hayden.....	4,700
Do.....	Wheeler.....	4,663
Malade Divide.....	Hayden.....	5,690
Malade Spring.....	Wheeler.....	5,150
Market Lake.....	U. & N. R. R.....	4,792
Do.....	Hayden.....	4,795
Marsh Cone.....	Hayden.....	7,663
Meade Peak.....	Wheeler.....	10,541
Montpelier.....	Hayden.....	5,793
Montpelier (co-operative store).....	Wheeler.....	5,936
Mormon Salt Works.....	Wheeler.....	6,598
Morristown.....	Wheeler.....	5,716
Do.....	Hayden.....	5,700
Mound Spring Station.....		4,429
Mule Spring, head of Gentile Valley.....	Wheeler.....	5,245
Newton.....	Hayden.....	4,500
Nine Mile.....	U. & N. R. R.....	4,756
North Soda Peak.....	Hayden.....	9,413
Oneida.....	Hayden.....	5,700
Oneida Salt Works.....	Wheeler.....	6,341
Do.....	Hayden.....	6,300
Ovid.....	Wheeler.....	6,022
Oxford.....	U. & N. R. R.....	4,774
Do.....	Hayden.....	4,862
Do.....	Wheeler.....	4,866
Oxford, Mount.....	Wheeler.....	9,386
Packer's Bridge.....	Hayden.....	4,500
Paris.....	Wheeler.....	6,018
Paris Peak.....	Hayden.....	9,522
Pend d'Oreille, Lake.....	Petermann.....	2,093
Do.....	N. P. R. R.....	2,059
Pillar Butte.....	Wheeler.....	5,301
Pisgah, or Caribou, Mount.....	Wheeler.....	9,695
Pleasant Valley Station.....	Hayden.....	6,086

Station.	Authority.	Elevation.
		<i>Feet.</i>
Pocatello	U. & N. R. R.	4,495
Do.... Stage Station	Hayden	4,512
Do.... Stage Station	Wheeler	4,620
Portage	Wheeler	4,700
Port Neuf	U. & N. R. R.	4,514
Prescott	N. P. R. R.	2,210
Preuss, Mount	Hayden	9,979
Putnam, Mount	Wheeler	8,905
Do	Hayden	8,933
Raft River Range	King	7,000
Raft River Stage Station	Wheeler	5,041
Red Rock Gap	Hayden (railroad levels)	4,792
Red Rock Ranch	Hayden	4,792
Rice's Ferry, Snake River	Wheeler	4,192
Rice's Ranch	Wheeler	4,723
Richardson's	Wheeler	5,268
Richmond	Wheeler	4,656
Ross Fork Indian Agency	Hayden	4,394
Do	Wheeler	4,545
Ross Fork Station	U. & N. R. R.	4,561
Saint Charles	Hayden	5,932
Saint George	Hayden	5,771
Salmon City	De Lacy	4,030
Samaria	Wheeler	4,561
Do	Hayden	4,800
Sandpoint	N. P. R. R.	2,100
Sand Ridge	U. & N. R. R.	4,723
Sawtelle's Peak	Hayden	10,013
Sedgwick Peak	Wheeler	9,207
Shadow Lake	Wheeler	4,310
Sherman, Mount	Wheeler	9,572
Shoshone	U. & N. R. R.	4,587
SNAKE RIVER PLAINS		4,000-4,500
Snow Mountain	Hayden	9,269
Soda Peak	Hayden	9,683
Soda Springs	Hayden	5,779
Do	Wheeler	5,778
Sohon Pass	Mullan	5,100
Stahn's Ranch	Wheeler	4,403
Do	Wheeler	6,057
Stevens, Mount	Petermann	7,400
Stevenson's Junction, Lemhi Valley	De Lacy	6,084
Stoner's Station		4,621
Sublette	Wheeler	5,155
Swan Lake	U. & N. R. R.	4,794
Switzer's Ranch	Wheeler	4,509
Taylor's Bridge	Hayden	4,627
Ten-mile Spring	Wheeler	5,548
Toponce Ranch	Wheeler	5,072
West Malade, Mount	Hayden	9,220
Weston	Wheeler	5,011
Wiesner, Mount	Mullan	6,000

ILLINOIS.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Addieville	St. L. & S. E. R. R	467
Allendale	C. & V. R. R	464
Altamont(crs'ng)St. L., V., T. H. & I. R. R.)	O. & M. R. R	616
Alton	C. & A. R. R	470
Amboy	Ill. Cent. R. R	733
America	C. & V. R. R	344
Antioch	I., D. & S. R. R	661
Antioch (geodetic station).....	U. S. Lake Survey	861
Arcola	Ill. Cent. R. R	674
Ashby	St. L. & S. E. R. R	554
Ash Grove (geodetic station).....	U. S. Lake Survey	666
Ashkum	Ill. Cent. R. R	600
Ashland	O. & M. R. R	625
Ashley	Ill. Cent. R. R	549
Atlanta	C. & A. R. R	744
Atwater (or Zanesville).....	J. S. E. R. R	652
Atwood	I., D. & S. R. R	609
Auburn	C. & A. R. R	666
Aurora	C., B. & Q. R. R	649
Badgley	St. L. & S. E. R. R	536
Baland (3½ miles east of Omaha)	O. & M. R. R	458
Bardstown, (crossing R., R. I. & St. L. R. R.)	O. & M. R. R	435
Barnett	J. S. E. R. R	672
Barnhill (valley of Watson's Creek).....	O. & M. R. R	385
Barry	H. & N. R. R	670
Bartley	O. & M. R. R	386
Bayliss	H. & N. R. R	869
Beardstown (surface of Illinois River).....	Mich. & Ill. Canal	423
Beaucoup	St. L. & S. E. R. R	538
Beecher	O. & M. R. R	610
Belle Air (geodetic station).....	U. S. Lake Survey	588
Belleville	B. & S. Ill. R. R	479
Benton	B. & E. R. R	486
Benton (geodetic station).....	U. S. Lake Survey	595
Berhany	P., D. & E. R. R	665
Big Rattlesnake.....	C. & St. L. R. R	405
Birkner	St. L. & S. E. R. R	499
Birkner(summit).....	St. L. & S. E. R. R	568
Birkner (surface ground).....	St. L. & S. E. R. R	583
Blandinsville.....	T., P. & W. R. R	730
Bloom	J. & N. Ind. R. R	688
Bloomfield (summit).....	C. & V. R. R	405
Bloomfield (surface ground)	C. & V. R. R	430
Bloomington	Ill. Cent. R. R	823
Bluff City	St. L., V. & T. H. R. R	505
Braceville.....	C. & A. R. R	603
Bradford	O. & M. R. R	581
Breeds	T., P. & W. R. R	491
Brighton	C. & A. R. R	694
Broadwell	C. & A. R. R	611
Buda	C. B. & Q. R. R	768
Bureau Junction	P. K. & P. R. R	455
Burnside	T. P. & W. R. R	638
Bushnell	C. B. & Q. R. R	664
Butler, Geodetic Station	U. S. Lake Survey	787
Cahoka	C. & St. L. R. R	425
Cairo	Ill. Cent. R. R	322
Do. Ohio River, high water	C. & V. R. R	320

Station.	Authority.	Elevation.
Cairo Ohio River, low water.....	.....	Feet. 278
Do....railroad track on Commercial ave.....	.....	322
Do....Signal Station.....	U. S. Signal Office.....	377
Caledonia.....	C. & V. R. R.....	363
Calumet.....	Ill. Cent. R. R.....	601
Camargo.....	I. D. & S. R. R.....	630
Cambridge.....	P. & R. I. R. R.....	778
Camp Point (T. W. & W. Junction).....	C. B. & Q. R. R.....	740
Canton.....	T. P. & W. R. R.....	654
Carbondale.....	Ill. Cent. R. R.....	394
Carlinville.....	C. & A. R. R.....	600
Carlyle, station ledge under window of E. face of C. H. B. M. on.....	U. S. C. & G. S.....	470
Carlyle.....	O. & M. R. R.....	450
Carmi.....	St. L. & S. E. R. R.....	401
Carthage.....	C. B. & Q. R. R.....	606
Casey.....	St. L., V. & T. H. R. R.....	640
Casey, Geodetic Station.....	U. S. Lake Survey.....	651
Caseyville.....	St. L., V. & T. H. R. R.....	432
Casner.....	I. D. & S. R. R.....	604
Cayuga.....	C. & A. R. R.....	702
Centerville.....	Ill. & St. L. R. R.....	379
Centralia.....	Ill. Cent. R. R.....	404
Champaign.....	Ill. Cent. R. R.....	732
Do....Signal Station.....	U. S. Signal Office.....	705
Chatham.....	C. & A. R. R.....	642
Chatsworth.....	T. P. & W. R. R.....	732
Chenoa.....	T. P. & W. R. R.....	724
Cherry Point.....	I. D. & S. R. R.....	640
Chicago, city base.....	U. S. Lake Survey.....	580
Do....C. & N. W. R. R. Station.....	City Engineer.....	580
Do....N. Ind. L. S. & M. S., and C. R. I. & P. R. R. Station.....	City Engineer.....	583
Do....P. F. W. and A. & St. L. R. R. Station.....	City Engineer.....	580
Do....Ill. Cent. & Mich. Cent. R. R. Station.....	City Engineer.....	580
Do....Signal Station.....	U. S. Signal Office.....	661
Chrisman.....	I. D. & S. R. R.....	644
Cisne.....	O. & M. R. R.....	460
Claremont, Geodetic Station.....	U. S. Lake Survey.....	606
Clifton.....	Ill. Cent. R. R.....	644
Do....Geodetic Station.....	U. S. Lake Survey.....	662
Clinton.....	Ill. Cent. R. R.....	727
Coles.....	P. D. & E. R. R.....	666
Collinsville.....	St. L., V. & T. H. R. R.....	465
Do....plank road.....	St. L., V. & T. H. R. R.....	417
Coultersville.....	B. & S. Ill. R. R.....	542
Crete, Geodetic Station.....	U. S. Lake Survey.....	791
Cuba.....	T. P. & W. R. R.....	674
Cumberland.....	St. L., V. & T. H. R. R.....	641
Cypress Junction.....	O. & M. R. R.....	363
Cypress Pond.....	C. & V. R. R.....	340
Dahlgren.....	St. L. & S. E. R. R.....	508
Dalton.....	C. & E. Ill. R. R.....	604
Danville.....	W. St. L. & P. R. R.....	608
Do....Junction.....	C. & E. Ill. R. R.....	610
Decatur.....	Ill. Cent. R. R.....	666
DeLafield.....	St. L. & S. E. R. R.....	427
Denver, Geodetic Station.....	U. S. Lake Survey.....	544
Disco.....	T. P. & W. R. R.....	663
Dixon.....	Ill. Cent. R. R.....	718
Drivers.....	St. L. & S. E. R. R.....	443

Station.	Authority.	Elevation.
		<i>Feet.</i>
Duquoin.....	B. & S. Ill. R. R.....	459
Do.....	B. & E. R. R.....	475
Dwight.....	P. K. & P. R. R.....	609
Dyke.....	Ill. & St. L. R. R.....	369
East Saint Louis, Relay House.....	City engineer, based on height of Saint Louis directrix.....	418
Do.....large bronze plate in south face east land pier of Great Bridge, B. M. on.....	U. S. C. & G. S.....	416
Edgewood.....	Ill. Cent. R. R.....	572
Edwards.....	C. B. & Q. R. R.....	650
Effingham.....	Ill. Cent. R. R.....	588
Eldorado.....	C. & V. R. R.....	384
Elgin, crossing of R. R.....	Mich. & Ill. Canal.....	700
Elkhart.....	C. & A. R. R.....	617
Elmwood.....	C. B. & Q. R. R.....	621
El Paso.....	Ill. Cent. R. R.....	742
Elvaston.....	T. P. & W. R. R.....	663
Elwood.....	C. & A. R. R.....	690
Enfield, junction S. & S. E. R. R.....	St. L. & S. E. R. R.....	458
Do old town.....	O. & M. R. R.....	463
Englewood.....	L. S. & M. S. R. R.....	604
Ewington.....	St. L., V. & T. H. R. R.....	559
Do... (surface).....		574
Fairburg.....	T. P. & W. R. R.....	697
Fairfield.....	O. & M. R. R.....	538
Fairmount, Geodetic Station.....	U. S. Lake Survey.....	704
Farmingdale.....	O. & M. R. R.....	583
Farina.....	Ill. Cent. R. R.....	571
Ferris.....	T. P. & W. R. R.....	677
Flora.....	O. & M. R. R.....	495
Flora, front basement window south-east corner public school building, B. M. on.....	U. S. C. & G. S.....	491
Foreston.....	C. & I. R. R.....	941
Forrest.....	T. P. & W. R. R.....	678
Fountain Bluff.....	D. & S. W. R. R.....	349
Frankfort.....	J. & N. Ind. R. R.....	755
Franklin.....	J. S. E. R. R.....	696
Freeburg.....	B. & S. Ill. R. R.....	514
Freeport.....	Ill. Cent. R. R.....	759
French Village.....	St. L. & S. E. R. R.....	441
Do..... (surface ground).....		437
Frennington.....	St. L., V. & T. H. R. R.....	595
Funk's Grove.....	C. & A. R. R.....	730
Galena.....	Ill. Cent. R. R.....	601
Galesburg.....	C. B. & Q. R. R.....	788
Galva.....	C. B. & Q. R. R.....	851
Garden, Geodetic Station.....	U. S. Lake Survey.....	800
Gardner.....	C. & A. R. R.....	605
Gilman.....	Ill. Cent. R. R.....	652
Gilmore.....	O. & M. R. R.....	573
Gilson.....	C. B. & Q. R. R.....	690
Girard.....	J. S. E. R. R.....	687
Glasford.....	T. P. & W. R. R.....	605
Godfrey.....	C. & A. R. R.....	635
Good Hope.....	T. P. & W. R. R.....	705
Goodson.....	I. D. & S. R. R.....	670
Grand Tower.....	D. & S. W. R. R.....	352
Grant, Geodetic Station.....	U. S. Lake Survey.....	716
Grayville.....	C. & V. R. R.....	393
Greenup.....	St. L., V. & T. H. R. R.....	351
Greenville.....	St. L., V. & T. H. R. R.....	555

Station.	Authority.	Elevation.
		<i>Feet.</i>
Gridley	T. P. & W. R. R.	758
Griggsville	H. & N. R. R.	625
Groveland Park	Ill. & St. L. R. R.	528
Guerpert's Pass	C. & St. L. R. R.	472
Hadley	H. & N. R. R.	728
Hammond	I. D. & S. R. R.	672
Hampton	P. D. & E. R. R.	605
Harmony	Ill. & S. L. R. R.	568
Harrisburg	C. & V. R. R.	387
Havana	P. P. & J. R. R.	472
Hawthorne	St. L. & S. E. R. R.	395
Hennepin	P. K. & P. R. R.	394
Hervey City	P. D. & E. R. R.	707
Highland	St. L., V. & T. H. R. R.	527
Do... (surface)	St. L., V. & T. H. R. R.	542
Hinekley	C. & I. R. R.	746
Hollidays	O. & M. R. R.	597
Hollis	T. P. & W. R. R.	451
Hoopestown	C. & E. Ill. R. R.	712
Howard's Point	St. L., V. & T. H. R. R.	612
Hull's Crossing Q. A. & St. L. R. R.	H. & N. R. R.	468
Hume	I. D. & S. R. R.	649
Hunt City, Geodetic Station	U. S. Lake Survey	551
Indian Creek Valley	O. & M. R. R.	398
Indian Lake, water	St. L., V. & T. H. R. R.	402
Do..... railroad station	St. L., V. & T. H. R. R.	416
Iowa	T. P. & W. R. R.	548
Jacksonville	J. S. E. R. R.	619
Joliet	C. & A. R. R.	541
Do... Des Moines River	Mich. & Ill. Canal	542
Jonesboro	Ill. Cent. R. R.	631
Kankakee	Ill. Cent. R. R.	626
Do... Geodetic Station	U. S. Lake Survey	642
Kansas, Geodetic Station	U. S. Lake Survey	629
Keithsburg	C. B. & Q. R. R.	542
Keithsburg Junction	C. B. & Q. R. R.	567
Kensington	M. C. R. R.	596
Kinderhook	H. & N. R. R.	478
Kingston (B. & O. R. R. shops)	B. P. & C. R. R.	588
Knoxville	C. B. & Q. R. R.	777
La Harpe	T. P. & W. R.	687
Lake	St. L., V. & T. H. R. R.	466
Lakewood	O. & M. R. R.	618
La Place	I. D. & S. R. R.	702
Larkinsburg	O. & M. R. R.	519
La Salle	Ill. Cent. R. R.	510
Do... surface of Illinois River	Mich. & Ill. Canal	429
Lawrenceville	D. & S. W. R. R.	424
Laws	Ill. & St. L. R. R.	539
Lebanon—sill of basement window east face public school, B. M. on	U. S. C. & G. S.	460
Lebanon	O. & M. R. R.	441
Lena	Ill. Cent. R. R.	959
Leoville	T. P. & W. R. R.	499
Lexington	C. & A. R. R.	751
Lincoln	C. & A. R. R.	612
Litchfield	J. S. E. R. R.	464
Loda	Ill. Cent. R. R.	777
Long Creek	I. D. & S. R. R.	672
Losant	P. K. & P. R. R.	668
Louisville	O. & M. R. R.	480
Lowder	J. S. E. R. R.	712
Lowndale	C. & A. R. R.	625
Ludlow	Ill. Cent. R. R.	767

Station.	Authority.	Elevation.
		<i>Feet.</i>
Geodetic Station	U. S. Lake Survey	772
.....	C. & A. R. R.	730
.....	St. L. & S. E. R. R.	500
.....	Ill. Cent. R. R.	716
.....	J. S. E. R. R.	666
Geodetic Station	U. S. Lake Survey	711
.....	T. P. & W. R. R.	463
.....	C., B. & Q. R. R.	630
.....	D. & S. W. R. R.	619
Geodetic Station	U. S. Lake Survey	678
.....	St. L., V. & T. H. R. R.	573
.....	H. & N. R. R.	728
.....	St. L. & S. E. R. R.	425
.....	Ill. Cent. R. R.	699
.....	Ill. Cent. R. R.	733
Geodetic Station	U. S. Lake Survey	706
.....	T. P. & W. R. R.	764
.....	Ill. Cent. R. R.	749
.....	I. D. & S. R. R.	618
Geodetic Station	U. S. Lake Survey	730
....., surface of	P., Ft. W. & C. R. R.	582
.....	O. & M. R. R.	642
.....	O. & M. R. R.	324
.....	O. & M. R. R.	606
.....	P. K. & P. R. R.	625
.....	Ill. Cent. R. R.	796
Geodetic Station	U. S. Lake Survey	666
.....	St. L. & S. E. R. R.	473
.....	C. & V. R. R.	323
.....	.....	318
.....	U. S. Lake Survey	522
Geodetic Station	Ill. Cent. R. R.	346
.....	D. & S. W. R. R.	372
.....	C. & I. R. R.	906
.....	St. L. & S. E. R. R.	506
.....	P. D. & E. R. R.	694
.....	I. D. & S. R. R.	639
.....	C. & St. L. R. R.	425
.....	H. & N. R. R.	438
.....
.....	Mich. & Ill. Canal	418
.....	St. L. & S. E. R. R.	503
.....	P. D. & E. R. R.	657
.....	B. & S. Ill. R. R.	404
.....	C. B. & Q. R. R.	573
.....	I. D. & S. R. R.	641
.....	St. L. & S. E. R. R.	411
.....	T. P. & W. R. R.	664
.....	H. & N. R. R.	778
.....	C. & V. R. R.	420
.....	O. & M. R. R.	424
.....	C. B. & Q. R. R.	597
Geodetic Station	U. S. Lake Survey	693
.....	Ill. Cent. R. R.	585
Geodetic Station	U. S. Lake Survey	506
.....	C. & A. R. R.	691
.....	C. & A. R. R.	726
.....
.....	U. S. C. & G. S.	529
.....	Ill. Cent. R. R.	525
.....	O. & M. R. R.	545
.....	St. L. & S. E. R. R.	450
.....
.....	U. S. C. & G. S.	487

Station.	Authority.	Elevation.
		<i>Fet.</i>
Olney, near southeast corner of grounds of public school at B. M.	U. S. C. & G. S.	468
Olney	O. & M. R. R.	468
Omaha	O. & M. R. R.	369
Onion Hill, Geodetic Station	U. S. Lake Survey	569
Opdyke	St. L. & S. E. R. R.	569
Oregon	C. & I. R. R.	764
Orion	P. & R. I. R. R.	751
Orland, Geodetic Station	U. S. Lake Survey	763
Ottawa	C. B. & Q. R. R.	468
Do. surface of Illinois River at mouth Fox River	Mich. & Ill. Canal	469
Owaneco	O. & M. R. R.	616
Palermo, Geodetic Station	U. S. Lake Survey	742
Pana	Ill. Cent. R. R.	676
Paris	D. & S. W. R. R.	765
Parkersburg, Geodetic Station	U. S. Lake Survey	569
Paxton, Geodetic Station	U. S. Lake Survey	604
Pekin	P. P. & J. R. R.	476
Peoria	T. P. & W. R. R.	463
Do. Adams Street Depot	C. R. I. & P. R. R.	468
Do. surface of Illinois River	Mich. & Ill. Canal	433
Pern, surface of Illinois River	Mich. & Ill. Canal	439
Philadelphia	O. & M. R. R.	616
Phillips Ferry	H. & N. R. R.	439
Pilot Grove, Geodetic Station	U. S. Lake Survey	760
Pinckneyville	B. & S. Ill. R. R.	444
Pisgah	J. S. E. R. R.	687
Plateau	St. L., V. & T. H. R. R.	568
Pleasant Plains	O. & M. R. R.	606
Pleasantville	St. L., V. & T. H. R. R.	586
Pocahontas	St. L., V. & T. H. R. R.	498
Polo	Ill. Cent. R. R.	949
Pontiac	C. & A. R. R.	668
Princeville	P. & R. I. R. R.	719
Prospect	J. S. E. R. R.	635
Queen's Lake, railroad track	St. L. & S. E. R. R.	406
Do high water	St. L. & S. E. R. R.	401
Do bed	St. L. & S. E. R. R.	379
Quincy	C. B. & Q. R. R.	483
Rantoul, Geodetic Station	U. S. Lake Survey	621
Redbud	C. & St. L. R. R.	457
Richland	O. & M. R. R.	605
Ridge Farm	D. & S. W. R. R.	685
Ridgway	O. & M. R. R.	379
Rinard	O. & M. R. R.	457
Roaches	St. L. & S. E. R. R.	496
Robinson	D. & S. W. R. R.	568
Rochelle	C. & I. R. R.	807
Rochester	O. & M. R. R.	569
Rock Island	C. R. I. & P. R. R.	584
Do	R. R. I. & St. L. R. R.	583
Rushville	C. B. & Q. R. R.	676
Sacramento, Bear Creek Valley	O. & M. R. R.	413
Saint Anne, I. C. & L. R. R.	C. & E. Ill. R. R.	659
Do Geodetic Station	U. S. Lake Survey	676
Saint Francisville	C. & V. R. R.	458
Saint Jacobs	St. L., V. & T. H. R. R.	605
Salem	O. & M. R. R.	538
Do. center of crossing southwest corner of C. H., B. M. on	U. S. C. & G. S.	546
Saline City, railroad track	C. & V. R. R.	409
Sanburn, railroad track	C. & V. R. R.	609
Sandoval	Ill. Cent. R. R.	494

Station.	Authority.	Elevation.
		<i>Feet.</i>
Sand Ridge	D. & S. W. R. R.	351
Sangamon	I. D. & S. R. R.	632
Sciota	T. P. & W. R. R.	748
Scotland	I. D. & S. R. R.	629
Scottsburg	T. P. & W. R. R.	677
Shawneetown, high water in Ohio River 1867	O. & M. R. R.	363
Shawneetown Junction	St. L. & S. E. R. R.	486
Sheldon	T. P. & W. R. R.	708
Sherman	C. & A. R. R.	609
Shipman	C. & A. R. R.	662
Shirley	C. & A. R. R.	770
Smithfield	T. P. & W. R. R.	645
South Chicago	L. S. & M. S. R. R.	591
Do	P., Ft. W. & C. R. R.	589
South Chicago Avenue	B. P. & C. R. R.	587
Sparta	C. & St. L. R. R.	549
Spencer	J. & N. Ind. R. R.	712
Spring Creek, Geodetic Station	U. S. Lake Survey	666
Springertown	O. & M. R. R.	382
Springfield, O. & M. & Illinois Central Station	O. & M. R. R.	589
Springfield, W., St. L. & P. Station		594
Do..... crossing C. A. & St. L. R. R. at S. Grand Avenue	O. & M. R. R.	592
Springfield, C. A. & St. L. depot	O. & M. R. R.	582
Do	O. & M. R. R.	545
Do..... Signal Station	U. S. Signal Office	644
Steele	P. D. & E. R. R.	667
Streator	C., B. & Q. R. R.	620
Streator	P., K. & P. R. R.	600
Sullivan, W., St. L. & P. Crossing	P., D. & E. R. R.	698
Sumner	O. & M. R. R.	457
Swanwick	B. & S. Ill. R. R.	572
Tenpin	P., D. & E. R. R.	682
Teutopolis	St. L., V. & T. H. R. R.	605
Thackery	St. L., & S. E. R. R.	505
Thorn Thicket	O. & M. R. R.	383
Tilden	B. & S. Ill. R. R.	523
Tilton Junction	D. & S. W. R. R.	673
Tolono	Ill. Cent. R. R.	729
Toulon	P. & R. I. R. R.	723
Towanda	C. & A. R. R.	810
Trenton	O. & M. R. R.	500
Troy	St. L., V. & T. H. R. R.	539
Trumbull	St. L. & S. E. R. R.	460
Tuscola	Ill. Cent. R. R.	657
Ullin	Ill. Cent. R. R.	338
Union	P., P. & J. R. R.	505
Unity	C. & St. L. R. R.	332
Vandalia	Ill. Cent. R. R.	500
Do..... Crossing, Ill. Cent. R. R.	St. L., V. & T. H. R. R.	500
Venedy	St. L. & S. E. R. R.	412
Virden	J. S. E. R. R.	691
Virginia	O. & M. R. R.	608
Warren	Ill. Cent. R. R.	1,005
Do..... Geodetic Station	U. S. Lake Survey	730
Washington	T. P. & W. R. R.	745
Waterloo	C. & St. L. R. R.	664
Watska	T. P. & W. R. R.	627
Do..... Geodetic Station	U. S. Lake Survey	670
Waverly	J. S. E. R. R.	691
West Chicago	C., B. & Q. R. R.	591
Westfield, Geodetic Station	U. S. Lake Survey	773
White's Hill	O. & M. R. R.	422

Station.	Authority.	Elevation.
		<i>Feet.</i>
Williamsville	C. & A. R. R.	627
Willow Springs, Geodetic Station	U. S. Lake Survey	729
Wilmington	C. & A. R. R.	561
Woodbury	St. L., V. & T. H. R. R.	559
Woodlawn	St. L. & S. E. R. R.	486
Woodlyn	J. S. E. R. R.	791
Yates City	C. B. & Q. R. R.	673
York	Ill. & St. L. R. R.	924

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INDIANA.

Station.	Authority.	Elevation.
.....	C., I., St. L. & C. R. R.	792
.....	C., I., St. L. & C. R. R.	890
.....ground, intersection with Pitts-		
.....burg road	C., R. & Ft. W. R. R.	796
boro	Eel R. R. R.	665
.....	B., P. & C. R. R.	927
dria	L. E. & W. R. R.	857
.....L. E. & W. Crossing	C., W. & M. R. R.	872
.....	L. E. & W. R. R.	710
.....	Pan Handle R. R.	810
.....	J., M. & I. R. R.	693
.....	T. H. & Inds. R. R.	820
on	C., C., C. & I. R. R.	880
.....Crossing	C., C., C. & I. R. R.	894
.....P., C. & St. L. Crossing	C., W. & M. R. R.	900
.....C., C., C. & I. Junction	C., W. & M. R. R.	894
.....	Ft. W., J. & S. R. R.	1,052
Junction	Pan Handle R. R.	696
.....	P., Ft. W. & C. R. R.	833
.....	I., B. & W. R. R.	1,190
on	E., T. H. & C. R. R.	522
.....	W., St. L. & P. R. R.	540
.....	T., W. & W. R. R.	556
bed of Wabash River	T., W. & W. R. R.	516
.....	Ft. W., J. & S. R. R.	872
Junction	Ft. W., J. & S. R. R.	868
.....	O. & M. R. R.	493
.....	J., M. & I. R. R.	549
.....	G., R. & Ind. R. R.	969
Summit	B., P. & C. R. R.	1,015
own	L. S. & M. S. R. R.	635
idge	L., N. A. & C. R. R.	936
d	I., D. & S. R. R.	902
ille	C., I., St. L. & C. R. R.	968
.....	Ft. W., M. & C. R. R.	921
ll	Inds. & V. R. R.	485
l	L., N. A. & C. R. R.	679
s	Ft. W., M. & C. R. R.	875
p	St. L. & S. E. R. R.	456
ossing	J., M. & I. R. R.	716
ville	J., M. & I. R. R.	1,056
y	I., D. & S. R. R.	748
ngdale	I., D. & S. R. R.	642
ngsport	I., B. & W. R. R.	1,225
ngton	L., N. A. & C. R. R.	742
.....	L. E. & W. R. R.	933
iver	I., B. & W. R. R.	980
n	Ft. W., M. & C. R. R.	837
lle	L. E. E., & S. W. R. R.	391
l	L. E. & W. R. R.	734
.....	Ft. W., M. & C. R. R.	939
on	L. E. & W. R. R.	896
wine	I., B. & W. R. R.	906
.....	T. H. & Inds. R. R.	643
ort	T. H. & Inds. R. R.	748
wood	C., C., C. & I. R. R.	791
ld	L. S. & M. S. R. R.	945
.....	L. S. & M. S. R. R.	786
n	Inds. & V. R. R.	659

Station.	Authority.	Elevation.
		<i>Feet.</i>
Brownsville.....	C., H. & D. R. R.	798
Bruceville.....	Inds. & V. R. R.	515
Bunker Hill.....	Pan Handle R. R.	890
Burnettsville.....	T., P. & W. R. R.	786
Butler.....	L. S. & M. S. R. R.	883
Butlers.....	J., M. & I. R. R.	793
Cambridge City.....	J., M. & I. R. R.	941
Campbells.....	Inds. & V. R. R.	619
Carney's.....	J., M. & I. R. R.	694
Cassville.....	Pan Handle R. R.	694
Cedar Creek.....	Eel R. R. R.	881
Centerton.....	Inds. & V. R. R.	631
Chalmers.....	L., N. A. & C. R. R.	797
Chandler.....	L. E., E. & S. W. R. R.	466
Charlestown.....	O. & M. R. R.	559
Chase.....	L. E. & W. R. R.	719
Chesterfield.....	C., C., C. & I. R. R.	997
Chestertown.....	L. S. & M. S. R. R.	699
Chestnut Ridge.....	J., M. & I. R. R.	553
Chili.....	Eel R. R.	725
Churnbusco.....	Eel R. R.	886
Circleville.....	L. E. & W. R. R.	984
Clarksburgh.....	T. H. & Inds. R. R.	771
Clarks Hill.....	Inds. & La. F. R. R.	798
Clay City.....	T. H. & S. E. R. R.	584
Claypool.....	C., W. & M. R. R.	908
Clayton.....	T. H. & Inds. R. R.	859
Clifford.....	J., M. & I. R. R.	664
Clinton.....	E., T. H. & C. R. R.	494
Do. high water in Wabash River.....	E., T. H. & C. R. R.	488
Do. low water in Wabash River.....	E., T. H. & C. R. R.	452
Cloverdale.....	L., N. A. & C. R. R.	792
Cloverland.....	T. H. & Inds. R. R.	577
Coal City.....	T. H. & S. E. R. R.	651
Coatsville.....	T. H. & Inds. R. R.	878
Cochran.....	O. & M. R. R.	493
Coldwater, M. & G. R. R. Crossing.....	Peninsula R. R.	896
Colfax, crossing C., L. & S. W. R. R.....	Inds. & La. F. R. R.	825
Collamer.....	Eel R. R.	795
Collins.....	Eel R. R.	870
Columbia City.....	P., Ft. W. & C. R. R.	836
Columbus.....	J., M. & I. R. R.	630
Do. . . branch on White River.....	J., M. & I. R. R.	631
Connersville.....	C., H. & D. R. R.	832
Converse.....	Pan Handle R. R.	815
Corunna.....	L. S. & M. S. R. R.	967
Cory.....	T. H. & S. E. R. R.	625
Crawfordsville.....	L., N. A. & C. R. R.	741
Crothersville.....	J., M. & I. R. R.	562
Crown Point Station.....	Pan Handle R. R.	714
Curveton.....	T., P. & W. R. R.	671
Daleville.....	C., C., C. & I. R. R.	910
Dana.....	I. D. & S. R. R.	643
Danville.....	T., W. & W. R. R.	613
Do. . . bed of Vermillion River.....	T., W. & W. R. R.	523
Do. . . Junction.....	E., T. H. & C. R. R.	609
Dayton.....	L. E. & W. R. R.	648
Decatur, opposite Station House.....	C. R. & Ft. W. R. R.	807
De Forest.....	L. E., E. & S. W. R. R.	406
Dixon.....	Inds. & V. R. R.	530
Duck Creek.....	I., B. & W. R. R.	1,060
Dunlaps.....	L. S. & M. S. R. R.	748
Dupont.....	J., M. & I. R. R.	783

Station.	Authority.	Elevation.
		<i>Feet.</i>
.....	I., B. & W. R. R.	885
.....	J. & M. Ind. R. R.	635
.....	E., T. H. & C. R. R.	497
.....	J., M. & I. R. R.	674
.....	Inds. & V. R. R.	460
.....	J., M. & I. R. R.	646
.....	L. S. & M. S. R. R.	755
.....	C., W. & M. R. R.	741
.....	L., N. A. & C. R. R.	662
.....	Inds. & V. R. R.	554
.....	E., T. H. & C. R. R.	488
.....	L., E. & W. R. R.	858
.....	T. H. & Inds. R. R.	677
.....	P., Ft. W. & C. R. R.	663
.....	E., T. H. & C. R. R.	507
.....	L. E., E. & S. W. R.	378
.....	W. & E. Canal	326
.....	C., I., St. L. & C. R. R.	774
.....	C., W. & M. R. R.	893
.....	J., M. & I. R. R.	1,048
.....	Inds. & V. R. R.	528
.....	C., C., C. & I. R. R.	1,037
.....	Ft. W., M. & C. R. R.	806
.....	T. H. & Inds. R. R.	844
.....	J., M. & I. R. R.	465
.....	J., M. & I. R. R.	695
.....	L., S. & M. S. R. R.	852
.....	C., C., C. & I. R. R.	857
.....	G. R. & Ind. R. R.	752
.....	City Engineer	762
.....	P., Ft. W. & C. R. R.	775
.....	L. E. & W. R. R.	841
.....	J., M. & I. R. R.	732
.....	J., M. & I. R. R.	736
.....	Inds. & V. R. R.	538
.....	Ft. W., J. & S. R. R.	1,055
.....	U. S. Lake Survey	1,142
.....	I., D. & S. R. R.	500
.....	Inds. & V. R. R.	738
.....	M. C. R. R.	669
.....	U. S. Lake Survey	958
.....	C., I., St. L. & C. R. R.	852
.....	B., P. & C. R. R.	892
.....	L. E., E. & S. W. R. R.	378
.....	Pan Handle R. R.	762
.....	E., T. H. & C. R. R.	616
.....	M. C. R. R.	600
.....	L. E. & W. R. R.	852
.....	J., M. & I. R. R.	1,000
.....	L. E. & W. R. R.	903
.....	T., P. & W. R. R.	718
.....	L. S. & M. S. R. R.	789
.....	Inds. & V. R. R.	595
.....	C., C., C. & I. R. R.	879
.....	T. H. & Inds. R. R.	834
.....	L., N. A. & C. R. R.	773
.....	I., B. & W. R. R.	1,120
.....	C., I., St. L. & C. R. R.	942
.....	I., B. & W. R. R.	1,165
.....	Ft. W., M. & C. R. R.	858
.....	C., I., St. L. & C. R. R.	508
.....	I., D. & S. R. R.	630
.....	Pan Handle R. R.	710

(221)

Station.	Authority.	Elevation.
Hamlet	P., Ft. W. & C. R. R.	79
Hamricks	T. H. & Inds. R. R.	78
Harmans	C., I., St. L. & C. R. R.	76
Harmony	T. H. & Inds. R. R.	75
Harrodsburgh	L., N. A. & C. R. R.	74
Harristown	L., N. A. & D. R. R.	73
Harrisville	C., C., C. & I. R. R.	72
Harford City	Ft. W., M. & C. R. R.	71
Hart's Crossing	L. E., E. & S. W. R. R.	70
Hastings	Inds. & V. R. R.	69
Hebron	Pan Handle R. R.	68
Henryville	J., M. & I. R. R.	67
Hillsburgh	L. E. & W. R. R.	66
Hillsdale	I., D., & S. R. R.	65
Hobart	P., Ft. W. & C. R. R.	64
Hobbs	L. E. & W. R. R.	63
Holmesville	L. S. & M. S. R. R.	62
Homer	J., M. & I. R. R.	61
Hubbells	T. H. & S. E. R. R.	60
Huntertown	G. R. & Inds. R. R.	59
Huntington	T. W. & W. R. R.	58
Do..... Court House Square	W. & E. Canal.	57
Hynds	Inds. & V. R. R.	56
Idaville	T. P. & W. R. R.	55
Indianapolis, city datum	City Engineer	54
Do..... Belt R. R. Crossing	J. M. & I. R. R.	53
Do..... Signal Station	U. S. Signal Office	52
Do..... Union Depot	C., C., C. & I. R. R.	51
Jamesboro	C., W. & M. R. R.	50
Jefferson	L. E. & W. R. R.	49
Do..... Geodetic Station	U. S. Lake Survey	48
Do..... Junction	J., M. & I. R. R.	47
Jeffersonville	O. & M. R. R.	46
Jonesboro	Pan Handle R. R.	45
Jonesville	J., M. & I. R. R.	44
Kankakee	P. R. & P. R. R.	43
Do..... Bridge	B. P. & C. R. R.	42
Kempton	L. E. & W. R. R.	41
Kendallville	L. S., M. S. R. R.	40
Kennard	I., B. & W. R. R.	39
Kent Station	T., P. & W. R. R.	38
Keystone	Ft. W., M. & C. R. R.	37
Kingsbury	Peninsula R. R.	36
King's Store	L. E. E. & S. W. R. R.	35
Koutts	Pan Handle R. R.	34
La Crosse	Pan Handle R. R.	33
La Fayette	T., W. & W. R. R.	32
La Grange	G. R. & Ind. R. R.	31
La Gro	T., W. & W. R. R.	30
Lake	M. C. R. R.	29
Lake Cicott	T. P. & W. R. R.	28
Lake Station	J. & N. Ind. R. R.	27
Laketon	Eel R. R. R.	26
Langdons	J., M. & I. R. R.	25
La Porte	L., S. & M. S. R. R.	24
Lawrence	C., C., C. & I. R. R.	23
Lawrenceburgh	O. & M. R. R.	22
Do..... bench-mark on water table of the court-house front	U. S. C. & G. S.	21
Leatherwood	I., D. & S. R. R.	20
Lebanon	Inds. & La. F. R. R.	19
Leonard	I., B. & W. R. R.	18
Lewis Creek	J., M. & I. R. R.	17

Station.	Authority.	Elevation.
		<i>Feet.</i>
.....	O. & M. R. R.	626
.....	C., H. & D. R. R.	979
.....	Eel R. R. R.	773
.....	L. S. & M. S. R. R.	886
.....	G. R. & Ind. R. R.	882
.....	G. R. & Ind. R. R.	1,022
.....	W., St. L. & P. R. R.	606
.....	C., I., St. L. & C. R. R.	775
.....	O. & M. R. R.	532
.....	I., B. & W. R. R.	1,140
.....	J., M. & I. R. R.	636
.....	L. E. & W. R. R.	874
.....	C. W. & M. R. R.	820
.....	Inds. & V. R. R.	509
J. R. & Ind. R. R.	I., B. & W. R. R.	1,174
.....	C., C., C. & I. R. R.	854
.....	C., I., St. L. & C. R. R.	1,027
.....	J., M. & I. R. R.	1,010
.....	J., M. & I. R. R.	451
inclined plane	J., M. & I. R. R.	472
nue	C., C., C. & I. R. R.	721
.....	J., M. & I. R. R.	896
.....	I., D. & S. R. R.	842
.....	Inds. & V. R. R.	482
.....	Pan Handle R. R.	811
.....	I., D. & S. R. R.	700
.....	T., W. & W. R. R.	721
.....	J., M. & I. R. R.	543
.....	Inds. & V. R. R.	598
.....	Inds. & V. R. R.	691
.....	I., B. & W. R. R.	920
.....	Inds. & V. R. R.	695
.....	J., M. & I. R. R.	490
.....	I., B. & W. R. R.	1,030
.....	Eel R. R. R.	700
.....	M. C. R. R.	603
.....	U. S. Lake Survey	592
.....	J., M. & I. R. R.	813
.....	Pan Handle R. R.	816
.....	O. & M. R. R.	985
.....	C., W. & M. R. R.	850
.....	B., P. & C. R. R.	841
.....	L. S. & M. S. R. R.	625
Station	U. S. Lake Survey	710
.....	L. S. & M. S. R. R.	886
.....	L. S. & M. S. R. R.	722
.....	O. & M. R. R.	676
on window-sill W. corner of		
e, M. N. Moore's store.	U. S. C. & G. S.	688
.....	I., D. & S. R. R.	872
Station	U. S. Lake Survey	1,027
.....	I., D. & S. R. R.	759
.....	I., D. & S. R. R.	494
.....	T., P. & W. R. R.	672
.....	L. E. & W. R. R.	672
.....	Ft. W., M. & C. R. R.	867
.....	I., D. & S. R. R.	705
.....	O. & M. R. R.	916
.....	Eel R. R. R.	877
.....	Inds. & V. R. R.	685
.....	C., I., St. L. & C. R. R.	982
.....	C., H. & D. R. R.	842
.....	I., B. & W. R. R.	870
.....	St. L. & S. E. R. R.	437

Station.	Authority.	Eleva
Mulberry	L. E. & W. R. R.	
Muncie	C., C., C. & I. R. R.	
Mundays	Inds. & V. R. R.	
New Albany	J. M. & I. R. R.	
Do. low water Ohio River	L., N. A. & C. R. R.	
Newbys	L. E. & W. R. R.	
New Carlisle	L. S. & M. S. R. R.	
New Castle	I. B. & W. R. R.	
New Era	Ft. W., J. & S. R. R.	
New Haven	T. W. & W. R. R.	
New Judson	P. K. & P. R. R.	
New Lisbon	Ft. W., M. & C. R. R.	
New Paris	C. W. & M. R. R.	
New Point	C., I., St. L. & C. R. R.	
Newport	E., T. H. & C. R. R.	
New Providence	L., N. A. & C. R. R.	
Nixon	I. B. & W. R. R.	
North Grove	Pan-Handle R. R.	
North Judson	Pan-Handle R. R.	
North Madison	J., M. & I. R. R.	
Do. top of inclined plane	J., M. & I. R. R.	
Do. summit of line	J., M. & I. R. R.	
North Manchester	Eel R. R. R.	
North Salem	I., D. & S. R. R.	
North Vernon	J., M. & I. R. R.	
Do. O. & M. R. R. crossing	J., M. & I. R. R.	
Numa	E., T. H. & C. R. R.	
Oakland	C., C., C. & I. R. R.	
Oakley	I., D. & S. R. R.	
Onward	Pan-Handle R. R.	
Opedu	E., T. H. & C. R. R.	
Orleans	L., N. A. & C. R. R.	
Osceola	L. S. & M. S. R. R.	
Osgood	O. & M. R. R.	
Ossian	Ft. W., M. & C. R. R.	
Otis	L. S. & M. S. R. R.	
Otterbien	L. E. & W. R. R.	
Oxford	L. E. & W. R. R.	
Palestine	C., H. & D. R. R.	
Paragon	Inds. & V. R. R.	
Parker	C., C., C. & I. R. R.	
Pendleton	C., C., C. & I. R. R.	
Penn. Geodetic Station	U. S. Lake Survey	
Perryville	E., T. H. & C. R. R.	
Perryville	C. & E. Ill. R. R.	
Peru	W., St. L. & P. R. R.	
Do. court-house square	W. & E. Canal	
Pierceville	O. & M. R. R.	
Pine	L. S. & M. S. R. R.	
Plainville	T. H. & Inds. R. R.	
Pleasant Lake	Ft. W., J. & S. R. R.	
Plymouth	P., K. & P. R. R.	
Plymouth	P., Ft. W. & C. R. R.	
Do. surface of Yellow River	P., Ft. W. & C. R. R.	
Poplar Grove	C., I., St. L. & C. R. R.	
Porter	M. C. R. R.	
Portland, low water Salamonie R.	C., R. & Ft. W. R. R.	
Potters	Eel R. R. R.	
Prescott	C., I., St. L. & C. R. R.	
Princeton	E. & T. H. R. R.	
Prison Station	J., M. & I. R. R.	
Putnamville	L., N. A. & C. R. R.	
Quincy	L., N. A. & C. R. R.	
Raccoon	I., D. & S. R. R.	

Station.	Authority.	Elevation.
		<i>Feet.</i>
.....	L., N. A. & C. R. R.	832
.....	L. E. & W. R. R.	936
.....	T. H. & Inds. R. R.	638
.....	T. P. & W. R. R.	732
.....	J., M. & I. R. R.	540
.....	T. P. & W. R. R.	662
.....	C., R. & Ft. W. R. R.	969
w water of White River.....	C., R. & Ft. W. R. R.	855
.....	Pan-Handle R. R.	994
ilroad crossing.....	C., R. & Ft. W. R. R.	993
w water Mississinewa River.....		964
.....	T. H. & S. E. R. R.	569
.....	I., D. & S. R. R.	839
.....	Eel R. R. R.	750
.....	J., M. & I. R. R.	665
.....	J., M. & I. R. R.	545
ge over White River.....	J., M. & I. R. R.	585
le.....	L. S. & M. S. R. R.	821
.....	G. R. & Ind. R. R.	920
.....	Pan-Handle R. R.	722
.....	J. & N. Ind. R. R.	636
.....	Pan-Handle R. R.	735
.....	J., M. & I. R. R.	964
H. & I. R. R.....	J., M. & I. R. R.	972
.....	I., D. & S. R. R.	923
.....	J., M. & I. R. R.	763
.....	J., M. & I. R. R.	633
.....	C., I., St. L. & C. R. R.	852
w water of Wabash River.....	W. & E. Canal.....	667
.....	L., N. A. & C. R. R.	714
.....	T. H. & S. E. R. R.	555
.....	Ind. & V. R. R.	472
.....	P., K. & P. R. R.	689
.....	J., M. & I. R. R.	630
.....	J., M. & I. R. R.	570
.....	L. S. & M. S. R. R.	923
.....	T. H. & Inds. R. R.	585
.....	J., M. & I. R. R.	478
.....	C., C., C. & I. R. R.	1,005
.....	J., M. & I. R. R.	605
O. & M. R. R. crossing.....	J., M. & I. R. R.	608
.....	J., M. & I. R. R.	769
& I., St. L. & C. R. R. crossing.....	J., M. & I. R. R.	768
ront Wabash River.....	O. & M. R. R.	480
.....	C., W. & M. R. R.	927
.....	L., N. A. & C. R. R.	875
ing.....	C., I., St. L. & C. R. R.	1,003
.....	L., N. A. & C. R. R.	717
.....	L., E. E. & S. W. R. R.	379
.....	L. S. & M. S. R. R.	725
.....	Mich. A. L. R. R.	679
S. & M. S. R. R. crossing.....	Peninsula R. R.	733
saint Joseph's River.....	Peninsula R. R.	699
.....	J., M. & I. R. R.	761
and.....	I., D. & S. R. R.	789
y.....	Eel R. R. R.	808
.....	C., I., St. L. & C. R. R.	1,013
.....	B., P. & C. R. R.	938
.....	J., M. & I. R. R.	465
.....	Inds. & V. R. R.	557
.....	T. H. & S. E. R. R.	508
.....	Ft. W., M. & C. R. R.	1,016
.....	Pan-Handle R. R.	706
.....	T. H. & Inds. R. R.	823

Station.	Authority.	Elevation.
Stevens	L., E., E. & S. W. R. R.	23
Stockford	St. L. & S. E. R. R.	39
Sugar Creek	I., B. & W. R. R.	55
Sullivan	E. & T. H. R. R.	50
Summit	J., M. & I. R. R.	60
Summit Grove	E., T. H. & C. R. R.	50
Summit Station	P., Ft. W. & C. R. R.	53
Do	Ft. W., J. & S. R. R.	1,000
Summitville	C., W. & M. R. R.	1,055
Sunman	C., I., St. L. & C. R. R.	1,055
Switz City	Inds. & V. R. R.	590
Switzer	Pan-Handle R. R.	570
Syracuse	B., P. & C. R. R.	770
Talbot	L., E. & W. R. R.	600
Taylor	Eel R. R. R.	65
Taylorville	J., M. & I. R. R.	70
Teegardin	B., P. & C. R. R.	65
Templeton	L., E. & W. R. R.	70
Terra Coupee	L. S. & M. S. R. R.	400
Terre Haute	E., T. H. & C. R. R.	400
Do..... Chestnut street	C. & E. Ill. R. R.	45
Do..... low water in Wabash River	C. & E. Ill. R. R.	400
Do..... public square	T. H. & Inds. R. R.	400
Do..... Rockville R. R. crossing	T. H. & Inds. R. R.	400
Do..... Alton R. R. crossing	T. H. & Inds. R. R.	400
Do..... 7th street R. R. crossing	T. H. & Inds. R. R.	400
Do..... 3d street R. R. crossing	Ind. & La F. R. R.	671
Thorntown	Pan-Handle R. R.	600
Tippecanoe Crossing	L., E. & W. R. R.	600
Tipton	M. C. R. R.	600
Tolleston	B., P. & C. R. R.	600
Turkey Lake, high water	I., D. & S. R. R.	1,100
Tyrone	C., C., C. & I. R. R.	300
Union	St. L. & S. E. R. R.	515
Upton, R. R. transfer	C., W. & M. R. R.	950
Urbana	G. R. & Ind. R. R.	750
Valentine	Inds. & V. R. R.	750
Valley Mills	P., Ft. W. & C. R. R.	800
Valparaiso	Peninsula R. R.	950
Do	U. S. Lake Survey	600
Van Buren, Geodetic Station	J., M. & I. R. R.	600
Vernon	J., M. & I. R. R.	500
Do. Muscatatauck Bridge	J., M. & I. R. R.	465
Vienna	E. & T. H. R. R.	417
Vincennes	C. & V. R. R.	435
Do.... bench-mark on stone ledge northwest front court-house.	U. S. C. & G. S.	431
Vincennes, bench-mark on center of top of easternmost stone pier of United States Coast and Geodetic Survey astronomical observatory, court-house grounds.	L. S. & M. S. R. R.	800
Vistula	W., St. L. & P. R. R.	735
Wabash	T. W. & W. R. R.	740
Wabash	W. & E. Canal	730
Do. Court House Square	C. W. & M. R. R.	715
Do. W., St. L. & P., over crossing	T. P. & W. R. R.	900
Walcott	G. R. & Ind. R. R.	610
Walcottsville	C. I., St. L. & C. R. R.	630
Waldron	J., M. & I. R. R.	830
Walesboro	G. R. & Ind. R. R.	82
Wallen	E., T. H. & C. R. R.	
Walnut Grove	P., Ft. W. & C. R. R.	
Wanatab		

Station.	Authority.	Elevation.
		<i>Fest.</i>
Warren	L. S. & M. S. R. R.	731
Warrington	I., B. & W. R. R.	1,020
Warsaw	P., Ft. W. & C. R. R.	824
Do. P., Ft. W. & C. crossing	C. W. & M. R. R.	839
Washington, B. M. on sill of basement window S. E. corner of court-house	U. S. C. & G. S.	510
Washington	O. & M. R. R.	484
Waterloo	L. S. & M. S. R. R.	897
Do.	Inds. & V. R. R.	723
Do. crossing L. S. & M. S. R. R.	Ft. W., J. & S. R. R.	914
Watsons	Ind. & V. R. R.	521
Wawaka	L. S. & M. S. R. R.	896
Waynesville	J., M. & I. R. R.	607
Weisburgh	C., I., St. L. & C. R. R.	929
West Lebanon	T. W. & W. R. R.	720
West Newton	Inds. & V. R. R.	779
Westphalia	Inds. & V. R. R.	456
West River	I., B. & W. R. R.	1,110
West Shoals, B. M. on center of cross on face of stone cap of basement window on W. side of C. H.	U. S. C. & G. S.	523
Westville	L., N. A. & C. R. R.	786
Wheeler	P., Ft. W. & C. R. R.	666
Whiteland	J., M. & I. R. R.	805
Whitesville	L., N. A. & C. R. R.	874
Whiting	L. S. & M. S. R. R.	606
Wigs	J., M. & S. R. R.	635
Williams	T. H. & Inds. R. R.	666
Williamsport	T., W. & W. R. R.	619
Willow Branch	I., B. & W. R. R.	950
Winamac	Pan-Handle R. R.	713
Winchester	C., C. & S. R. R.	1,069
Do. at crossing of Bellefontaine R. R.	C. R. & Ft. W. R. R.	1,088
Wirts	J., M. & I. R. R.	842
Woodburn	T., W. & W. R. R.	750
Worthington	Ind. & V. R. R.	522
Do. crossing	Ft. W., M. & C. R. R.	866
Wrays	J., M. & I. R. R.	866
Yorktown	C., C., C. & I. R. R.	924
Zionsville	Inds. & La. F. R. R.	

INDIAN TERRITORY.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Adair	Mo., Kans. & Tex. R. R.....	684
Arbuckle, Fort.....	Med. Dept., U. S. A.....	1,000
Atoka	Mo., Kans. & Tex. R. R.....	556
Beaversville.....	Pacific R. R. Reports.....	1,083
Blue Jacket.....	Mo., Kans. & Tex. R. R.....	779
Bushy Head.....	A. & P. R. R.....	773
Caddo	Mo., Kans. & Tex. R. R.....	705
Caney	Mo., Kans. & Tex. R. R.....	530
Catall	A. & P. R. R.....	792
Catoosa	A. & P. R. R.....	623
Checota.....	Mo., Kans. & Tex. R. R.....	587
Chelsea	A. & P. R. R.....	718
Choteau	Mo., Kans. & Tex. R. R.....	624
Claremore	A. & P. R. R.....	604
Colbert	Mo., Kans. & Tex. R. R.....	658
Durant	Mo., Kans. & Tex. R. R.....	639
Enfala	Mo., Kans. & Tex. R. R.....	617
Fulsa	A. & P. R. R.....	701
Gibson	Mo., Kans. & Tex. R. R.....	533
Gibson, Fort, Signal Station.....	U. S. Signal-Office.....	510
Honey Springs	Toner	568
Kingfisher .....	.....	950
Lilletta	Mo., Kans. & Tex. R. R.....	592
Limestone Gap.....	Mo., Kans. & Tex. R. R.....	645
McAlister	Mo., Kans. & Tex. R. R.....	684
Mingo	A. & P. R. R.....	608
Muscogee	Mo., Kans. & Tex. R. R.....	599
Oaktata	Mo., Kans. & Tex. R. R.....	590
Perryville.....	Mo., Kans. & Tex. R. R.....	708
Reams	Mo., Kans. & Tex. R. R.....	609
Sequoyah	A. P. R. R.....	698
Shawnee Village	Pacific R. R. Reports.....	812
Sill, Fort, Signal Station.....	U. S. Signal-Office.....	1,190
South Canadian.....	Mo., Kans. & Tex. R. R.....	657
Stringtown	Mo., Kans. & Tex. R. R.....	625
Towson, Fort	Med. Dept., U. S. A.....	300
Vinita, Junction with St. L. & S. F. R. R..	Mo., Kans. & Tex. R. R.....	696
Virdigris.....	A. & P. R. R.....	613
White Oak.....	A. & P. R. R.....	772

IOWA.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Abbott.....	Cent. Iowa R. R.....	1,176
Ackley.....	Cent. Iowa R. R.....	1,177
Adams.....	B., C. R. & N. R. R.....	606
Adel.....	D., M. & N. W. R. R.....	901
Agency.....	B. & M. R. R. R.....	801
Albia.....	B. & M. R. R. R.....	945
Albion.....	Cent. Iowa R. R.....	968
Alden.....	Toner.....	1,165
Algona.....	Smithsonian Inst.....	1,500
Alta.....	Ill. Cent. R. R.....	1,519
Ames.....	C. & N. W. R. R.....	936
Arcadia.....	C. & N. W. R. R.....	1,439
Ashawaw.....	D. M. & Ft. D. R. R.....	905
Atkinson, Fort.....	Med. Dept., U. S. A.....	700
Atlee.....	Ft. M. & N. W. R. R.....	827
Barnes City.....	B., C. R. & N. R. R.....	900
Barnum.....	Toner.....	1,173
Bartlett.....	K. C., St. J. & C. B. R. R.....	949
Batavia.....	B. & M. R. R. R.....	640
Bayfield.....	B., C. R. & N. R. R.....	674
Beasons.....	C., R. I. & P. R. R.....	1,256
Beaver.....	C. & N. W. R. R.....	1,041
Belknap (summit).....	W., St. L. & P. R. R.....	857
Belleplaine.....	C. & N. W. R. R.....	840
Beloit.....	S. C. & D. R. R.....	1,257
Benbow.....	Ft. M. & N. W. R. R.....	813
Benson's Grove.....	M. & St. L. R. R.....	1,216
Bertram.....	C. & N. W. R. R.....	733
Big Creek.....	Toner.....	590
Blairsburgh.....	Ill. Cent. R. R.....	1,237
Blairstown.....	C. & N. W. R. R.....	855
Blencoe.....	S. C. & P. R. R.....	1,056
Bloomfield.....	W., St. L. & P. R. R.....	855
Do.. junction with W., St. L. and P. R. R.....	B. & S. R. R.....	884
Boone.....	C. & N. W. R. R.....	1,155
Boonesborough.....	Toner.....	1,160
Bowen's Prairie.....	Toner.....	800
Brainard.....	B., C. R. & N. R. R.....	909
Britt.....	M. & St. L. R. R.....	1,230
Brooklyn.....	C., R. I. & P. R. R.....	836
Burlington, H. W. Miss. River, 1851.....	B. & M. R. R. R.....	523
Do.. H. W. Miss. River, 1870.....	B. & M. R. R. R.....	518
Do.. L. W. Miss. River, 1870.....	B. & M. R. R. R.....	505
Do.. crossing Main street.....	C., B. & Q. R. R.....	526
Do.. bridge.....	C., B. & Q. R. R.....	537
Calamus.....	C. & N. W. R. R.....	721
Caldwell.....	B. & S. R. R.....	887
California Junction.....	S. C. & P. R. R.....	1,024
Callender.....	D. M. & Ft. D. R. R.....	1,167
Calliope.....	S., C. & D. R. R.....	1,200
Calmar.....	C., M. & St. P. R. R.....	1,269
Cantril.....	B. & S. R. R.....	776
Carroll.....	C. & N. W. R. R.....	1,240
Cascade.....	D. & St. P. R. R.....	770
Casey.....	C., R. I. & P. R. R.....	1,226
Castalia.....	C., M. & St. P. R. R.....	1,257
Cedar Creek.....	Toner.....	616

Station.	Authority.	Elevation.
		<i>Feet.</i>
Williamsville	C. & A. R. R.	627
Willow Springs, Geodetic Station	U. S. Lake Survey	729
Wilmington	C. & A. R. R.	561
Woodbury	St. L., V. & T. H. R. R.	559
Woodlawn	St. L. & S. E. R. R.	495
Woodlyn	J. S. E. R. R.	701
Yates City	C. B. & Q. R. R.	673
York	Ill. & St. L. R. R.	524

INDIANA.

Station.	Authority.	Elevation.
Acton.....	C., I., St. L. & C. R. R.....	792
Adams.....	C., I., St. L. & C. R. R.....	880
Do...ground, intersection with Pitts- burg road.....	C., R. & Ft. W. R. R.....	796
Adamsboro.....	Eel R. R. R.....	665
Albion.....	B., P. & C. R. R.....	927
Alexandria.....	L. E. & W. R. R.....	857
Do...L. R. & W. Crossing.....	C., W. & M. R. R.....	872
Ambia.....	L. E. & W. R. R.....	710
Amboy.....	Pan Handle R. R.....	810
Amity.....	J., M. & I. R. R.....	693
Amo.....	T. H. & Inds. R. R.....	820
Anderson.....	C., C., C. & I. R. R.....	880
Do...Crossing.....	C., C., C. & I. R. R.....	894
Do...P., C. & St. L. Crossing.....	C., W. & M. R. R.....	900
Do...C., C., C. & I. Junction.....	C., W. & M. R. R.....	894
Angola.....	Ft. W., J. & S. R. R.....	1,052
Anoka Junction.....	Pan Handle R. R.....	696
Arcola.....	P., Ft. W. & C. R. R.....	833
Arta.....	I., B. & W. R. R.....	1,190
Atherton.....	E., T. H. & C. R. R.....	522
Attica.....	W., St. L. & P. R. R.....	540
Do.....	T., W. & W. R. R.....	556
Do...bed of Wabash River.....	T., W. & W. R. R.....	516
Auburn.....	Ft. W., J. & S. R. R.....	872
Do...Junction.....	Ft. W., J. & S. R. R.....	868
Aurora.....	O. & M. R. R.....	493
Austin.....	J., M. & I. R. R.....	549
Avilla.....	G., R. & Ind. R. R.....	969
Do...Summit.....	B., P. & C. R. R.....	1,015
Baileytown.....	L. S. & M. S. R. R.....	635
Bainbridge.....	L., N. A. & C. R. R.....	936
Barnard.....	I., D. & S. R. R.....	902
Batesville.....	C., I., St. L. & C. R. R.....	968
Baton.....	Ft. W., M. & C. R. R.....	921
Becknell.....	Inds. & V. R. R.....	485
Bedford.....	L., N. A. & C. R. R.....	679
Beesons.....	Ft. W., M. & C. R. R.....	875
Belknap.....	St. L. & S. E. R. R.....	456
Belt Crossing.....	J., M. & I. R. R.....	716
Bentonville.....	J., M. & I. R. R.....	1,056
Bethany.....	I., D. & S. R. R.....	748
Bloomingsdale.....	I., D. & S. R. R.....	642
Bloomingsport.....	I., B. & W. R. R.....	1,225
Bloomington.....	L., N. A. & C. R. R.....	742
Blooms.....	L. E. & W. R. R.....	933
Blue River.....	I., B. & W. R. R.....	980
Bluffton.....	Ft. W., M. & C. R. R.....	837
Boonville.....	L. E. E., & S. W. R. R.....	391
Boswell.....	L. E. & W. R. R.....	734
Bowser.....	Ft. W., M. & C. R. R.....	939
Boyleston.....	L. E. & W. R. R.....	896
Brandywine.....	I., B. & W. R. R.....	905
Brazil.....	T. H. & Inds. R. R.....	643
Bridgeport.....	T. H. & Inds. R. R.....	748
Brightwood.....	C., C., C. & I. R. R.....	791
Brimfield.....	L. S. & M. S. R. R.....	945
Bristol.....	L. S. & M. S. R. R.....	786
Brooklyn.....	Inds. & V. R. R.....	659

Station.	Authority.	Elevation.
		<i>Feet.</i>
Cedar Falls	B., C. R. & N. R. R.	844
Do.....water in Cedar River	C., F. & M. R. R.	859
Cedar Rapids	C. & N. W. R. R.	744
Do.....City datum	City engineer	719
Central City	Toner	986
Centredale	B., C. R. & N. R. R.	715
Centre Point	B., C. R. & N. R. R.	809
Centerville, crossing C. R. I. & P. at grade.	Mo., Iowa & Neb. R. R.	1,013
Ceres	Toner	825
Chapin	Cent. Iowa R. R.	1,246
Chariton	B. & M. R. R.	1,020
Charles City	C. M. & St. P. R. R.	1,012
Charleston	K. & N. W. R. R.	676
Chequaque	B. & M. R. R. R.	605
Cherokee	Ill. Cent. R. R.	1,211
Chester	C., M. & St. P. R. R.	1,244
Chickasaw	C., M. & St. P. R. R.	1,142
Chillicothe	B. & M. R. R. R.	645
Cincinnati	B. & S. R. R.	1,037
Clarence	C. & N. W. R. R.	841
Clarenda	B. & M. R. R. R.	1,009
Clarenda Junction	B. & M. R. R. R.	1,097
Clarksville	B., C. R. & N. R. R.	914
Clear Lake .....	.....	984
Do.....depot	C., M. & St. P. R. R.	1,237
Clermont	B., C. R. & N. R. R.	856
Clinton (station grounds)	C. & N. W. R. R.	699
Do.....H. W. Miss. River	C. & N. W. R. R.	587
Clorinda	Mo., Iowa & Neb. R. R.	1,032
Coalfield	Cent. Iowa R. R.	725
Colburg	B. & M. R. R. R.	1,008
Colfax	Toner	753
Colo	C. & N. W. R. R.	1,059
Columbus Junction	B., C. R. & N. R. R.	585
Cone	B., C. R. & N. R. R.	608
Conover	C. M. & St. P. R. R.	1,247
Coon River .....	.....	1,017
Corinth	M. & St. L. R. R.	1,160
Corning	B. & M. R. R.	1,127
Corydon	Mo., Iowa & Neb. R. R.	1,092
Council Bluffs U. P. transfer depot	K. C. St. J. & C. B. R. R.	929
Do.....U. P. bridge, abutments	K. C. St. J. & C. B. R. R.	1,028
Do.....Bed Mo. R.	K. C. St. J. & C. B. R. R.	953
Do.....H. W. Mo. R.	K. C. St. J. & C. B. R. R.	986
Do.....L. W. Mo. R.	K. C. St. J. & C. B. R. R.	967
Crawfordsville	B. & M. R. R. R.	692
Crescent .....	.....	1,209
Cresco	C., M. & St. P. R. R.	1,312
Cromwell	B. & M. R. R. R.	1,220
Dallas Centre	D., M. & Ft. D. R. R.	1,085
Danville	B. & M. R. R. R.	715
Davenport	C., R. I. & P. R. R.	578
Do.....Signal Station	U. S. Signal Office	615
Do.....City datum	City engineer	534
Do.....H. W. Miss. R.	City engineer	556
Do.....L. W. Miss. R.	City engineer	539
Davis Creek	Toner	649
Deam	Mo., Iowa & Neb. R. R.	825
Decorah	C., M. & St. P. R. R.	900
Delassus	Toner	1,068
Delavan	Toner	636
Delaware	Ill. Cent. R. R.	1,084
Do.....crossing D. & I. R. R.	D. & St. P. R. R.	938

Station.	Authority.	Elevation.
		<i>Feet.</i>
Delaware, crossing D. & S. C. R. R.....	D. & St. P. R. R.....	1,083
Do.. Centre .....	.....	1,106
Denison	C. & N. W. R. R.....	1,192
Des Moines, station C., R. I. & P. R. R.....	City engineer	800
Do..... station C., & N. W. R. R.....	City engineer	798
Do..... station D., M. & N. W. R. R.....	City engineer.....	807
Do..... station K. & D. M. R. R.....	City engineer	709
Do..... L. W. in Des Moines R.....	City engineer	776
Des Moines, Signal Station.....	U. S. Signal Office	849
De Soto.....	C., R. I. & P. R. R.....	886
Dewey.....	Ft. M. & N. W. R. R.....	813
Dewitt, crossing D. & St. P. R. R.....	C. & N. W. R. R.....	699
Dexter.....	C., R. I. & P. R. R.....	1,146
Dillon	Cent. Iowa R. R.....	985
Donaldson	B. & S. R. R.....	707
Donnellson	K. & N. W. R. R.....	681
Doon	St. P. & S. C. R. R.....	1,282
Downey	C., R. I. & P. R. R.....	683
Dry Creek.....	Toner	1,003
Dubuque	Ill. Cent. R. R.....	614
Do. City datum	Ill. Cent. R. R.....	595
Do. Signal Station.....	U. S. Signal Office	665
Duncombe	Ill. Cent. R. R.....	1,118
Durant.....	C., R. I. & P. R. R.....	712
Dye	Ft. M. & N. W. R. R.....	814
Dyersville.....	Ill. Cent. R. R.....	940
Dysart.....	B., C. R. & N. R. R.....	958
Earlham.....	C., R. I. & P. R. R.....	1,106
East Nebraska City, Junction.....	K. C., St. J. & C. B. R. R.....	926
Do..... Depot	K. C., St. J. & C. B. R. R.....	928
East Orange.....	St. P. & S. C. R. R.....	1,302
East Plattsmouth.....	Toner	924
Eastport	Mo., Iowa & Neb. R. R.....	926
Do.. rail K. C., St. J. & C., B. R. R.....	Mo., Iowa & Neb. R. R.....	929
Do.. water in Mo. River March 12, 1871.....	Mo., Iowa & Neb. R. R.....	912
Eddyville.....	Cent. Iowa R. R.....	672
Do.. Des Moines River "surface"	Cent. Iowa R. R.....	698
Eldora.....	Cent. Iowa R. R.....	1,153
Elgin.....	B., C. R. & N. R. R.....	833
Elm Creek.....	Toner	1,094
Elmira.....	B., C. R. & N. R. R.....	741
Ely.....	B., C. R. & N. R. R.....	731
Essex.....	B. & M. R. R. R.....	996
Exline.....	B. & S. R. R.....	1,016
Fairbanks.....	Toner	1,083
Fairfax.....	C. & N. W. R. R.....	784
Fairfield.....	B. & M. R. R. R.....	767
Farley.....	Ill. Cent. R. R.....	1,111
Farmington, crossing K. & D. M. R. R.....	B. & S. R. R.....	571
Farragut.....	B. & M. R. R. R.....	963
Fayette Village.....	Smithsonian Inst.....	1,000
Floyd.....	I. C., C., F. & M. R. R.....	1,107
Forest City.....	M. & St. L. R. R.....	1,220
Fort Atkinson.....	C., M. & St. P. R. R.....	1,023
Fort Dodge.....	D. M. & Ft. D. R. R.....	1,015
Do.....	Ill. Cent. R. R.....	1,032
Do.....	M. & St. L. R. R.....	1,120
Fort Madison.....	C. B. & Q. R. R.....	516
Do.....	Ft. M. & N. W. R. R.....	632
Do..... 14th st.....	Ft. M. & N. W. R. R.....	644
Franklin.....	B. & S. R. R.....	702
Do.....	Cent. Iowa R. R.....	1,193
Frederic.....	B. & M. R. R. R.....	735
Fredericksburgh.....	Toner	785

Station.	Authority.	Elevation.
		<i>Feet.</i>
Fulton.....	C., R. I. & P. R. R.....	758
Garner.....	C., M. & St. P. R. R.....	1,227
Garrison.....	B., C. R. & N. R. R.....	849
Geneva.....	Cent. Iowa R. R.....	1,181
Gifford.....	Cent. Iowa R. R.....	1,030
Gilman.....	Cent. Iowa R. R.....	1,035
Given.....	Cent. Iowa R. R.....	703
Glendale.....	B. & M. R. R. R.....	745
Glenwood.....	B. & M. R. R. R.....	979
Gowrie.....	D. M. & Ft. D. R. R.....	1,154
Graham.....	B., C. R. & N. R. R.....	816
Grand Junction.....	C. & N. W. R. R.....	1,055
Grand Mound.....	C. & N. W. R. R.....	736
Greene.....	B., C. R. & N. R. R.....	943
Grinnell.....	C., R. I. & P. R. R.....	1,011
Grove City.....	C., R. I. & P. R. R.....	1,271
Grundy Center.....	B., C. R. & N. R. R.....	966
Guthrie.....	C., R. I. & P. R. R.....	1,269
Guttenberg.....	Toner.....	690
Hamburg.....	K. C., St. J. & C. B. R. R.....	912
Do... Semaphore, B. & M. Junction.....	K. C., St. J. & C. B. R. R.....	902
Hampton.....	Cent. Iowa R. R.....	1,240
Hardin's Creek.....	Toner.....	1,026
Harmony.....	B., & M. R. R. R.....	1,040
Harris Grove.....	Smithsonian Inst.....	900
Haynes, side track.....	K. C., St. J. & C. B. R. R.....	955
Hazard.....	Toner.....	1,405
Hazleton.....	B., C. R. & N. R. R.....	968
Hepburn.....	B., & M. R. R. R.....	1,078
Hesper.....	Smithsonian Inst.....	720
Hickory Grove.....	Cent. Iowa R. R.....	810
Holland.....	B., C. R. & N. R. R.....	965
Homestead.....	C., R. I. & P. R. R.....	866
Hosper.....	St. P. & S. C. R. R.....	1,338
Humboldt.....	Ft. D. & Ft. R. R. R.....	1,082
Do.....	M. & S. N. L. R. R.....	1,029
Independence.....	Ill. Cent. R. R.....	921
Do.....	B., C. R. & N. R. R.....	1,111
Iowa City.....	B., C. R. & N. R. R.....	644
Do.....	C., R. I. & P. R. R.....	671
Iowa Junction.....	B., C. R. & N. R. R.....	618
Jamesville.....	C. F. & M. R. R.....	892
Jesup.....	Ill. Cent. R. R.....	990
Julien.....	Toner.....	845
Kalona.....	B., C. R. & N. R. R.....	651
Kellogg.....	C., R. I. & P. R. R.....	839
Kennedy.....	D. M. & N. W. R. R.....	968
Kensett.....	Cent. Iowa R. R.....	1,306
Keokuk, Water Street depot.....	C. B. & Q. R. R.....	501
Do... city datum.....	City Engineer.....	480
Do... track on bridge.....	City Engineer.....	548
Do... Signal Station.....	U. S. Signal Office.....	618
Keoswick.....	B., C. R. & N. R. R.....	862
Kinross.....	B., C. R. & N. R. R.....	757
Kossuth.....	B., C. R. & N. R. R.....	769
Lacey.....	Cent. Iowa R. R.....	850
Lake Mills.....	M. & St. L. R. R.....	1,264
La Porte.....	B., C. R. & N. R. R.....	802
Le Grande.....	C. & N. W. R. R.....	953
Le Mars.....	St. P. & S. C. R. R.....	1,221
Do... Floyd River.....	St. P. & S. C. R. R.....	1,197
Leon, cross branch, B. & M. R. R. R.....	Mo., Iowa & Neb. R. R.....	1,025
Le Roy.....	C. M. & St. P. R. R.....	1,298

Station.	Authority.	Elevation.
		<i>Feet.</i>
Lime Springs	C. M. & St. P. R. R.	1,258
Linden	D. M. & N. W. R. R.	1,139
Linton	B., C. R. & N. R. R.	761
Lisbon	C. & N. W. R. R.	888
Liscomb	Cent. Iowa R. R.	1,078
Livermore	M. & St. L. R. R.	1,135
Do	Ft. D. & Ft. R. R. R.	1,128
Logan	Toner	928
London	C. & N. W. R. R.	733
Lone Tree	B., C. R. & N. R. R.	718
Loveland, B. & M. R. R. station	Mo., Iowa & Neb. R. R.	962
Lowden	B., & M. R. R. R.	1,205
Low Moor	C. & N. W. R. R.	657
Luana	C., M. & St. P. R. R.	1,132
Lucas	Toner	857
Lyons City	Smithsonian Inst	630
McGregor, L. W. Miss. R.	C., M. & St. P. R. R.	616
Do	C., M. & St. P. R. R.	634
McPaul	K. C., St. J. & C. B. R. R.	940
Madison .....	.....	600
Manchester	Ill. Cent. R. R.	950
Manly Junction	B., C. R. & N. R. R.	1,189
Do	Cent. Iowa R. R.	1,291
Manson	Ill. Cent. R. R.	1,245
Marblerock	B., C. R. & N. R. R.	992
Marcus	Ill. Cent. R. R.	1,469
Marshalltown, crossing Iowa Central R. R.	C. & N. W. R. R.	898
Mary's Ford	Toner	1,148
Mason City	C., M. & St. P. R. R.	1,130
Maynard	B., C. R. & N. R. R.	1,096
Mechanicsville	C. & N. W. R. R.	912
Mediapolis	B. & N. R. R.	756
Melrose	B. & M. R. R. R.	853
Meriden	Ill. Cent. R. R.	1,412
Middletown	B. & M. R. R. R.	725
Milton	B. & S. R. R.	806
Minburn	D. M. & Ft. D. R. R.	1,062
Missouri Valley, junction with S. C. & P. R. R.	C. & N. W. R. R.	1,022
Mitchell	C. F. & M. R. R.	1,202
Mitchellville	C., R. I. & P. R. R.	966
Modale	S. C. & P. R. R.	1,029
Moingona, bridge over Des Moines River ..	C. & N. W. R. R.	907
Do	C. & N. W. R. R.	870
Mona	Ill. Cent. R. R.	1,203
Mondamin	S. C. & P. R. R.	1,038
Monona	C., M. & St. P. R. R.	1,221
Montezuma	B., C. R. & N. R. R.	948
Monticello (near)	Smithsonian Inst	800
Montour	C. & N. W. R. R.	868
Morning Sun	B., C. R. & N. R. R.	835
Morrison	B., C. R. & N. R. R.	937
Morse	B., C. R. & N. R. R.	753
Moscow	C., R. I. & P. R. R.	652
Moulton	W., St. L. & P. R. R.	994
Do	B. & S. R. R.	994
Mount Auburn	B., C. R. & N. R. R.	853
Mount Ayr	Mo., Iowa & Neb. R. R.	1,236
Mount Pleasant	B. & M. R. R. R.	725
Mount Sterling	B. & S. R. R.	649
Mount Union	B. & N. R. R.	712
Mount Vernon	C. & N. W. R. R.	858
Murray	Toner	1,183

Station.	Authority.	Elevation.
		<i>Feet.</i>
ascatine	B. C. R. & N. R. R.	544
ashua	C. F. & M. R. R.	955
evada	C. & N. W. R. R.	1,017
ew Boston	K. & N. W. R. R.	674
ewburgh	Cent. Iowa R. R.	1,036
ew Hampton	C. M. & St. P. R. R.	1,166
ew Jefferson	C. & N. W. R. R.	1,071
ew Sharon	Cent. Iowa R. R.	877
ewton	C. R. I. & P. R. R.	956
ichols	B. C. R. & N. R. R.	628
ishnabotany	Toner	1,151
odaway	B. & M. R. R. R.	1,080
ora Junction	B. C. R. & N. R. R.	1,052
orman	M. & St. L. R. R.	1,279
orth McGregor	C. M. & St. P. R. R.	633
orth Union	Toner	1,250
orthwood	B. C. R. & N. R. R.	1,210
orway	C. & N. W. R. R.	809
akland	B. & M. R. R. R.	1,193
asis	B. C. R. & N. R. R.	790
elwein	B. C. R. & N. R. R.	1,059
gden	C. & N. W. R. R.	1,109
uana City	S. C. & P. R. R.	1,064
rtonville	D. M. & N. W. R. R.	1,035
sage	I. C., C. F. & M. R. R.	1,178
sceols	B. & M. R. R. R.	1,123
skaloosa	Cent. Iowa R. R.	850
ssian	C. M. & St. P. R. R.	1,281
ttumwa	B. & M. R. R. R.	630
xford	C. R. I. & P. R. R.	720
acific Junction, C. B. & Q. R. crossing	K. C., St. J. & C. B. R. R.	960
Do depot	K. C., St. J. & C. B. R. R.	961
Palo	B. C. R. & N. R. R.	741
Panora	D. M. & N. W. R. R.	1,074
Parkersburgh	Toner	953
Paton	D. M. & Ft. D. R. R.	1,116
Peosta	Ill. Cent. R. R.	747
Percival	K. C., St. J. & C. B. R. R.	933
Perry	D. M. & Ft. D. R. R.	977
Pitman	Ft. M. & N. W. R. R.	831
Plainfield	C. F. & M. R. R.	926
Pleasant Plain	Smithsonian Inst.	950
Plymouth Junction	B. C. R. & N. R. R.	1,114
Pomeroy	Toner	1,244
Portlandville	S. C. & D. R. R.	1,162
Postville	C. M. & St. P. R. R.	1,207
Poultney	Toner	800
Prairie Creek	Toner	699
Pulaski	B. & S. R. R.	840
Quarry	C. & N. W. R. R.	898
Quasqueton	Smithsonian Inst.	888
Randalia	B. C. R. & N. R. R.	1,096
Redfield	D. M. & N. W. R. R.	968
Red Oak	B. & M. R. R.	1,033
Reinbeck	B. C. R. & N. R. R.	916
Remsen	Toner	1,335
Ripley	D. M. & Ft. D. R. R.	1,080
Riverside	B. C. R. & N. R. R.	631
River Sioux	S. C. & P. R. R.	1,053
Riverton	B. & M. R. R. R.	931
Rock Falls	B. C. R. & N. R. R.	1,094
Rockford	B. C. R. & N. R. R.	1,011
Rock Rapids	St. P. & S. C. R. R.	1,344
Rockwell	Cent. Iowa R. R.	1,219

Station.	Authority.	Elevation.
		<i>Fest.</i>
Rolfe	Smithsonian Inst	1,000
Roscoe	B. & N. R. R.	755
Rossville	Smithsonian Inst	1,400
Rowley	B., C. R. & N. R. R.	960
Russell	B. & M. R. R.	1,017
Sac City	Toner	900
St. Auggar	C. F. & M. R. R.	1,179
St. Gilman	St. P. & S. C. R. R.	1,442
St. Mary's	Smithsonian Inst	1,200
Salem	Toner	694
Salix	S. C. & P. R. R.	1,097
Salt Creek	Toner	792
Sand Springs, crossing D. and I. R. R.	D. & St. P. R. R.	938
Sargeants	S. C. & P. R. R.	1,008
Searsboro	Cent. Iowa R. R.	810
Sedan, crossing B. and S. W., at grade	Mo., Iowa & Neb. R. R.	827
Seney	St. P. & S. C. R. R.	1,221
Sheffield	Cent. Iowa R. R.	1,163
Sheldon	St. P. & S. C. R. R.	1,406
Shell Rock	B., C. R. & N. R. R.	911
Shellsburgh	B., C. R. & N. R. R.	764
Shenandoah	B. & M. R. R.	979
Sibley	St. P. & S. C. R. R.	1,509
Sioux City	St. P. & C. R. R.	1,122
Sioux Valley	S. C. & D. R. R.	1,185
Sloan	S. C. & P. R. R.	1,089
Solon	B., C. R. & N. R. R.	784
South English	B., C. R. & N. R. R.	830
Sperry	B., C. R. & N. R. R.	747
Spring Valley	D. & St. P. R. R.	1,236
Squaw Fork	Toner	915
Stanton	Toner	1,004
Stanwood	C. & N. W. R. R.	863
State Center	C. & N. W. R. R.	1,086
Steamboat Rock	Cent. Iowa R. R.	1,061
Strawberry Point	D. & St. P. R. R.	1,218
Summit Station	C., F. & M. R. R.	1,084
Summitville	K. & N. W. R. R.	666
Tama	C. & N. W. R. R.	832
Tara	D., M. & Ft. D. R. R.	1,159
Thayer	Toner	1,002
Thornburgh	B., C. R. & N. R. R.	868
Toddville	B., C. R. & N. R. R.	770
Trader's Point	K. C., St. J. & C. B. R. R.	974
Traer	B., C. R. & N. R. R.	906
Tyrone	B. & M. R. R. R.	819
Union	Cent. Iowa R. R.	1,013
Vallisca	B. & M. R. R. R.	1,058
Vawter's Grove	Smithsonian Inst	1,500
Victor	C. R., I. & P. R. R.	806
Victoria	Toner	788
Viele	B. & S. R. R.	543
Vinton	B., C. R. & N. R. R.	800
Do.	Smithsonian Inst	607
Walcott	C., E. I. & P. R. R.	733
Walker	B., C. R. & N. R. R.	880
Walnut	B. & M. R. R. R.	1,040
Wapello	B., C. R. & N. R. R.	578
Warren	B. & S. R. R.	709
Washburn	B., C. R. & N. R. R.	817
Washington	B. & N. R. R.	738
Waterloo	Ill. Cent. R. R.	862
Waubeck	Toner	968
Waukeee	D., M. & Ft. D. R. R.	1,043

Station.	Authority.	Elevation.
		<i>Feet.</i>
Waverly	I. C. C. F. & M. R. R.	942
Webster	Ill. Cent. R. R.	1,054
Wellman	B., C. R. & N. R. R.	688
Wesley	C., M. & St. P. R. R.	1,254
West Branch	B. C. R. & N. R. R.	708
Westfield	S. C. & D. R. R.	1,148
West Grove	W., St. L. & P. R. R.	946
West Liberty	C., R. I. & P. R. R.	656
West Nishnabotany	Toner	938
West Point	Ft. M. & N. W. R. R.	866
West Union	B., C. R. & N. R. R.	1,166
What Cheer	B., C. R. & N. R. R.	741
Wheatland	C. & N. W. R. R.	695
Whitfield	B. & M. R. R.	677
Whiting	S. C. & P. R. R.	1,074
Willetts	B. & S. R. R.	604
Wilton	C. R. I. & P. R. R.	672
Winfield	B. & N. R. R.	690
Winslow	B., C. R. & N. R. R.	874
Winthrop	Ill. Cent. R. R.	1,053
Yarmouth	B. & N. R. R.	696

KANSAS.

Station.	Authority.	Elevation.
		<i>Feet.</i>
bilene	K. P. R. R.	1,155
lden	A., T. & S. F. R. R.	1,675
lma	A., T. & S. F. R. R.	1,051
lum Creek	K. P. R. R.	1,568
mericus	M., K. & T. R. R.	1,158
mes	Toner	790
nbrey	A., T. & S. F. R. R.	3,121
rcadia	Ft. S., S. E. & M. R. R.	813
rcola	K. P. R. R.	1,423
rgentine	A., T. & S. F. R. R.	748
rkansas City	A., T. & S. F. R. R.	1,064
mstrong	K. P. R. R.	755
ssaria	S. & S. W. R. R.	1,284
tohison	A., T. & S. F. R. R.	973
Do... high water 1881	A., T. & S. F. R. R.	787
Do... Nebraska Junction	St. J. & D. C. R. R.	1,109
tebison Fort	Med. Dept., U. S. A.	2,330
ugusta	A., T. & S. F. R. R.	1,212
von	Smithsonian Inst	775
xtell	St. J. & D. C. R. R.	1,363
aldwin	K. C., L. & S. R. R.	1,046
arclay	A., T. & S. F. R. R.	1,169
arnard	K. C., Ft. S. & G. R. R.	795
arns	U. P. R. R.	1,356
arrett's	U. P. R. R.	1,142
arton	A., T. & S. F. R. R.	1,448
avaria	K. P. R. R.	1,271
axter	K. C., Ft. S. & G. R. R.	831
eattie	St. J. & D. C. R. R.	1,294
elfast	A., T. & S. F. R. R.	2,669
ellefonte	A., T. & S. F. R. R.	2,345
elleplaine	A., T. & S. F. R. R.	1,209
elleville	St. J. & D. C. R. R.	1,536
eloit	Soloman R. R.	1,383
elton	A., T. & S. F. R. R.	1,093
elvoir	L. & S. W. R. R.	871
elvue	K. P. R. R.	965
ennington	Soloman R. R.	1,226
eulah	K. C., Ft. S. & G. R. R.	977
ig John	M., K. & T. R. R.	1,218
ig Stranger	K. P. R. R.	834
ismarek	A., T. & S. F. R. R.	1,185
ismarek Grove	K. P. R. R.	819
lack Wolf	K. P. R. R.	1,565
lne Rapids	U. P. R. R.	1,198
oling	A., T. & S. F. R. R.	908
onita	K. C., Ft. S. & G. R. R.	1,101
oyles	K. C. R. R.	1,165
renner	A. & N. R. R.	977
rittsville	Soloman R. R.	1,336
rookville	K. P. R. R.	1,348
uck Creek	K. P. R. R.	846
uffalo Park	K. P. R. R.	2,755
unker Hill	K. P. R. R.	1,864
urden	S. K. & W. R. R.	1,380
urlingame	A. T. & S. F. R. R.	1,043
urlington	M., K. & T. R. R.	1,037
urns	A., T. & S. F. R. R.	1,488

Station.	Authority.	Elevation.
		<i>Feet.</i>
Caldwell.....	A., T. & S. F. R. R.....	1,102
Cambridge.....	S. K. & W. R. R.....	1,245
Canton.....	A., T. & S. F. R. R.....	1,522
Carbon.....	K. C. R. R.....	952
Carbondale.....	A., T. & S. F. R. R.....	1,072
Carbon Hill.....	L. & S. W. R. R.....	1,122
Carlisle.....	A., T. & S. F. R. R.....	3,172
Carlyle.....	K. C., L. & S. R. R.....	984
Carthage.....	A., T. & S. F. R. R.....	5,060
Cedar Grove.....	A., T. & S. F. R. R.....	1,237
Do. June.....	A., T. & S. F. R. R.....	772
Centralia.....	U. P. R. R.....	1,270
Chanute.....	K. C., L. & S. R. R.....	910
Do. June. L. L. & G. R. R.....	M., K. & T. R. R.....	914
Chase.....	A., T. & S. F. R. R.....	1,702
Cherokee.....	K. C., Ft. S. & G. R. R.....	933
Cherryvale.....	K. C., L. & S. R. R.....	832
Chetopa.....	M., K. & T. R. R.....	832
Chirley Camp.....	Toner.....	2,106
Choteau.....	A., T. & S. F. R. R.....	764
Cicero.....	A., T. & S. F. R. R.....	1,305
Cimarron.....	A., T. & S. F. R. R.....	2,116
Circleville.....	St. J. & D. C. R. R.....	1,116
Clarksburgh.....	Ft. S., S. E. & M. R. R.....	820
Clay Center.....	J. C., & Ft. K. R. R.....	1,201
Cleveland.....	K. P. R. R.....	3,046
Clifton.....	J. C., & Ft. K. R. R.....	1,272
Climax.....	A., T. & S. F. R. R.....	1,015
Clinton.....	Toner.....	762
Clyde.....	J. C. & Ft. K. R. R.....	1,229
Coal Creek.....	Soloman R. R.....	1,197
Coal Vale.....	Ft. S., S. E. & M. R. R.....	832
Coffeyville.....	K. C., L. & S. R. R.....	722
Collyer.....	K. P. R. R.....	2,526
Colony, divide between Kan. & Ark. River.....	K. C., L. & S. R. R.....	1,121
Columbus.....	K. C., Ft. S. & G. R. R.....	905
Concordia.....	J. C. & Ft. K. R. R.....	1,366
Conway.....	A., T. & S. F. R. R.....	1,527
Coolidge.....	A., T. & S. F. R. R.....	3,339
Corning.....	U. P. R. R.....	1,369
Council Grove.....	M., K. & T. R. R.....	1,222
Crane.....	S. K. & W. R. R.....	783
Crawford.....	A., T. & S. F. R. R.....	1,220
Cummings.....	A., T. & S. F. R. R.....	981
Deerfield.....	A., T. & S. F. R. R.....	2,933
Delphos.....	Soloman R. R.....	1,301
Derby.....	A., T. & S. F. R. R.....	1,271
De Soto.....	A., T. & S. F. R. R.....	790
Detroit.....	K. P. R. R.....	1,135
Dodge City.....	A., T. & S. F. R. H.....	2,475
Do. Signal Station.....	U. S. Signal Office.....	2,512
Dorrance.....	K. P. R. R.....	1,730
Douglas.....	A., T. & S. F. R. R.....	1,194
Dundee.....	A., T. & S. F. R. R.....	1,895
Eagle Creek.....	A., T. & S. F. R. R.....	1,188
Eagle Tail.....	K. P. R. R.....	3,434
Easelton.....	K. C., L. & S. R. R.....	960
Easton.....	K. C. R. R.....	909
Edgerton.....	K. C., L. & S. R. R.....	962
Edwardsville.....	K. P. R. R.....	783
Efingham.....	U. P. R. R.....	1,144
Eldorado.....	A., T. & S. F. R. R.....	1,282
Elk.....	K. C. R. R.....	979
Ellinor.....	A., T. & S. F. R. R.....	1,154

Station.	Authority.	Elevation.
		<i>Feet.</i>
Ellinwood	A. T. & S. F. R. R.	1,780
Ellis	K. P. R. R.	2,117
Ellsworth	K. P. R. R.	1,538
Elmdale	A. T. & S. F. R. R.	1,193
Elmwood	Toner	775
Emporia	A. T. & S. F. R. R.	1,132
Do. Junction M., K. & T.	A. T. & S. F. R. R.	1,132
Eakridge	A. T. & S. F. R. R.	1,403
Endora	A. T. & S. F. R. R.	811
Eureka	A. T. & S. F. R. R.	1,073
Fairfield	A. T. & S. F. R. R.	1,060
Fairmont	K. P. R. R.	955
Fall Leaf	K. P. R. R.	809
Farlington	K. C., Ft. S. & G. R. R.	968
Do	A. & N. R. R.	914
Florence	A. T. & S. F. R. R.	1,260
Fontana	K. C., Ft. S. & G. R. R.	928
Frankfort	U. P. R. R.	1,155
Fullerton	A. T. & S. F. R. R.	1,091
Fulton	K. C., Ft. S. & G. R. R.	813
Galesburg	M., K. & T. R. R.	979
Galoa	A. T. & S. F. R. R.	1,537
Garden City	A. T. & S. F. R. R.	2,827
Gardner	Smithsonian Inst.	800
Garfield	A. T. & S. F. R. R.	2,068
Garnett	K. C., L. & S. R. R.	1,056
Girard	K. C., Ft. S. & G. R. R.	990
Glasco	Solomon R. R.	1,321
Glendale	A. T. & S. F. R. R.	849
Godfrey	K. C., Ft. S. & G. R. R.	902
Gopher	K. P. R. R.	3,318
Gorham	K. P. R. R.	1,912
Grainfield	K. P. R. R.	2,211
Grantville	K. P. R. R.	877
Grasshopper Falls	K. C. R. R.	917
Great Bend	A. T. & S. F. R. R.	1,841
Greenleaf	U. P. R. R.	1,462
Green Ridge	Toner	1,013
Grenola	S. K. & W. R. R.	1,112
Grinnell	K. P. R. R.	2,904
Half Mound	K. C. R. R.	979
Halstead Junction, H. C. R. R.	A. T. & S. F. R. R.	1,366
Hamlin	St. J. & D. C. R. R.	983
Hanover	St. J. & D. C. R. R.	1,228
Harker, Fort	K. P. R. R.	1,582
Hartford	M., K. & T. R. R.	1,087
Hartland	A. T. & S. F. R. R.	3,047
Haweville	A. T. & S. F. R. R.	1,104
Hayes	K. P. R. R.	1,991
Hazleton	K. P. R. R.	1,114
Hepler	M., K. & T. R. R.	1,002
Hevels	M., K. & C. R. R.	914
Hiattsville	M., K. & T. R. R.	1,003
Hiawatha	St. J. & D. C. R. R.	1,094
Highland	A. & N. R. R.	893
Hillsboro'	A. T. & S. F. R. R.	1,424
Hillsdale	K. C., Ft. S. & G. R. R.	903
Hoge	K. P. R. R.	854
Hollenburgh	St. J. & D. C. R. R.	1,259
Holliday	A. T. & S. F. R. R.	753
Holton	K. C. R. R.	1,026
Homer	K. P. R. R.	1,874
Horners	A. T. & S. F. R. R.	1,314
Horton	A. T. & S. F. R. R.	1,188

Station.	Authority.	Elevation.
		<i>Feet.</i>
Howard.....	A., T. & S. F. R. R.	1,006
Howell.....	A., T. & S. F. R. R.	2,535
Hugo.....	Toner	4,937
Humboldt.....	K. C., L. & L. R. R.	952
Hunds Station.....	K. C. R. R.	835
Hunnewell.....	Sumner Co. R. R.	1,102
Hutchinson.....	A., T. & S. F. R. R.	1,324
Independence.....	K. C., L. & S. R. R.	794
Iola.....	K. C., L. & S. R. R.	955
Irving.....	U. P. R. R.	1,132
Junction City.....	K. P. R. R.	1,082
Kansas Falls.....	K. P. R. R.	1,106
Kent.....	A., T. & S. F. R. R.	1,491
Kingsley.....	A., T. & S. F. R. R.	2,102
Kingsville.....	K. P. R. R.	920
Labette.....	M., K. & T. R. R.	864
La Cygne.....	K. C., Ft. S. & G. R. R.	825
Ladore.....	M., K. & T. C. R.	909
Lakeview.....	A., T. & S. F. R. R.	898
Lakin.....	A., T. & S. F. R. R.	2,989
Larkins.....	K. C. R. R.	944
Larned.....	A., T. & S. F. R. R.	1,333
Larned, Fort.....	Med. Dept., U. S. A.	1,322
Laura.....	A., T. & S. F. R. R.	1,638
Lawrence.....	A., T. & S. F. R. R.	849
Do..... K. P. crossing.....	A., T. & S. F. R. R.	822
Leavenworth.....	K. P. R. R.	765
Do..... Junction M. P. R. R.	A., T. & S. F. R. R.	764
Do..... Fort.....	Med. Dept., U. S. A.	896
Do..... Signal Station.....	U. S. Signal Office	842
Lecompton.....	A. T. & S. F. R. R.	844
Do.....	Smithsonian Inst	825
Lehigh.....	A., T. & S. F. R. R.	1,520
Le Loup.....	K. C., L. & S. R. R.	949
Lenape.....	K. P. R. R.	781
Lenexa.....	K. C., Ft. S. & G. R. R.	1,050
Le Roy.....	M., K. & T. R. R.	994
Liberty.....	K. C., L. & S. R. R.	744
Lindsborg.....	S. & S. W. R. R.	1,332
Linwood.....	K. P. R. R.	789
Little River.....	A., T. & S. F. R. R.	1,572
Longton.....	S. K. & W. R. R.	919
Loring.....	K. P. R. R.	789
Louisville.....	St. J. & D. C. R. R.	1,006
Lowell.....	S. C. & J. R. R.	823
Lyons.....	A., T. & S. F. R. R.	1,691
McCune.....	M., K. & C. R. R.	924
McIntosh.....	A., T. & S. F. R. R.	1,125
McLouth.....	A., T. & S. F. R. R.	1,157
McPherson.....	A., T. & S. F. R. R.	1,488
Madison.....	A., T. & S. F. R. R.	1,068
Manhattan Junction, K. P. R. R.	A., T. & S. F. R. R.	1,000
Manville.....	St. J. & D. C. R. R.	972
Marion Center.....	A., T. & S. F. R. R.	1,239
Marmaton.....	M., K. & T. R. R.	917
Marysville.....	St. J. & D. C. R. R.	1,156
Mathewson.....	M., K. & C. R. R.	853
Medina.....	K. P. R. R.	853
Medway.....	A., T. & S. F. R. R.	3,284
Memphis.....	Ft. S., S. E. & M. R. R.	842
Menoken.....	K. P. R. R.	902
Meriden.....	A., T. & S. F. R. R.	964
Do..... Junction.....	A., T. & S. F. R. R.	945
Do..... crossing L. S. & S. T. R. R.	A., T. & S. F. R. R.	976

Station.	Authority.	Elevation.
		<i>Feet.</i>
Milford	J. C. & Ft. K. R. R.	1, 112
Minneapolis	Solomon R. R.	1, 257
Mitchell	A., T. & S. F. R. R.	1, 731
Moline	S. K. & W. R. R.	1, 050
Monmouth	M., K. & C. R. R.	881
Monotony	K. P. R. R.	3, 774
Monrovia	U. P. R. R.	1, 054
Monument	K. P. R. R.	3, 181
Moore	K. P. R. R.	915
Morehead	K. C., L. & L. R. R.	900
Morganville	J. C. & F. K. R. R.	1, 238
Morse	A., T. & S. F. R. R.	1, 085
Mount Zion	K. P. R. R.	1, 654
Mulvane	A., T. & S. F. R. R.	1, 085
Muncy Siding	K. P. R. R.	767
Muscotah	U. P. R. R.	973
Neosho Falls	M., K. & T. R. R.	980
Neosho Rapids	M., K. & T. R. R.	1, 076
Netawaka	St. J. & D. C. R. R.	1, 140
Nettleton	A., T. & S. F. R. R.	2, 112
Neutral	K. C., Ft. S. & G. R. R.	862
New Cambria	K. P. R. R.	1, 189
Newman	K. P. R. R.	861
New Salem	S. K. & W. R. R.	1, 242
Newton	A., T. & S. F. R. R.	1, 438
Nichols	A., T. & S. F. R. R.	1, 001
Nickerson	A., T. & S. F. R. R.	1, 592
North Topeka, K. P. crossing	A., T. & S. F. R. R.	872
North Robinson	St. J. & D. C. R. R.	949
North Wichita	A., T. & S. F. R. R.	1, 294
Do crossing F. S. & W. R. R.	A., T. & S. F. R. R.	1, 302
Nortonville	A., T. & S. F. R. R.	1, 158
Norway	St. J. & D. C. R. R.	1, 041
Norwood	K. C., L. & S. R. R.	939
Ochiltree	K. C., Ft. S. & G. R. R.	1, 078
Offerle	A., T. & S. F. R. R.	2, 261
Ogallah	K. P. R. R.	2, 367
Ogdensburgh	K. P. R. R.	1, 060
Olathe	A., T. & S. F. R. R.	1, 030
Osage	A., T. & S. F. R. R.	1, 075
Osage Mission	M., K. & T. R. R.	890
Osawkee	A., T. & S. F. R. R.	876
Oskaloosa	A., T. & S. F. R. R.	989
Oswego	M., K. & T. R. R.	895
Ottawa, Marias des Cygnes River	K. C., L. & S. R. R.	896
Oxford	S. K. & W. R. R.	1, 160
Paola	K. C., Ft. S. & G. R. R.	854
Pardee	Toner	1, 155
Parker	Toner	921
Parkersville	M., K. & T. R. R.	1, 337
Parnell	A., T. & S. F. R. R.	1, 039
Parsons Junction, Neosho Division	M., K. & T. R. R.	902
Pauline	A., T. & S. F. R. R.	1, 027
Pavilion	A., T. & S. F. R. R.	1, 096
Pawnee	K. C., Ft. S. & G. R. R.	988
Pawnee Rock	A., T. & S. F. R. R.	1, 939
Paw Paw	A., T. & S. F. R. R.	1, 110
Peabody	A., T. & S. F. R. R.	1, 349
Peace	Toner	1, 613
Perry	Ft. S., S. E. & M. R. R.	799
Perryville	K. P. R. R.	852
Perth	A., T. & S. F. R. R.	1, 201
Petersburgh	Toner	2, 224
Peterton	A., T. & S. F. R. R.	1, 065

Station.	Authority.	Elevation.
		Ft.
Philips.....	A., T. & S. F. R. R.	1,125
Pierceville.....	A., T. & S. F. R. R.	2,750
Pilot Knob.....	K. P. R. R.	945
Pleasant Hill Junction, with Mo. Pac. R. R.	A., T. & S. F. R. R.	840
Pleasanton.....	K. C., Ft. S. & G. R. R.	806
Pleasant Ridge.....	K. C. R. R.	1,086
Plymouth.....	A., T. & S. F. R. R.	1,135
Prairie City.....	K. C., L. & S. R. R.	1,032
Prescott.....	K. C., Ft. S. & G. R. R.	887
Princeton.....	K. C., L. & S. R. R.	906
Raymond.....	A., T. & S. F. R. R.	1,791
Raymore.....	A., T. & S. F. R. R.	1,097
Readings.....	A., T. & S. F. R. R.	1,073
Red Vermillion.....	St. J. & D. C. R. R.	1,046
Reno.....	K. P. R. R.	835
Richland.....	L. & S. W. R. R.	901
Richmond.....	K. C., L. & S. R. R.	1,017
Ridgeway.....	A., T. & S. F. R. R.	2,514
Ridgway.....	Toner	903
Riley, Fort.....	K. P. R. R.	1,072
Rock Creek.....	A., T. & S. F. R. R.	1,037
Rome.....	S. C. R. R.	1,215
Rossville.....	K. P. R. R.	935
Russell.....	K. P. R. R.	1,835
Ryan.....	St. J. & D. C. R. R.	892
Sabetha.....	St. J. & D. C. R. R.	1,308
Safford.....	A., T. & S. F. R. R.	1,140
Saint Francis.....	Toner	906
Saint George.....	K. P. R. R.	1,000
Saint Marys.....	K. P. R. R.	965
Salem.....	K. P. R. R.	1,558
Salina.....	K. P. R. R.	1,225
Sand Spring.....	K. P. R. R.	1,146
Sargent.....	Toner	3,425
Scott, Fort.....	M., K. & T. R. R.	892
Scotts.....	K. C. R. R.	1,025
Scranton.....	A., T. & S. F. R. R.	1,099
Sedgwick Junction, with H. C. R. R.	A., T. & S. F. R. R.	1,369
Sedgwick City.....	A., T. & S. F. R. R.	1,368
Seely.....	A., T. & S. F. R. R.	1,102
Seneca.....	St. J. & D. C. R. R.	1,154
Severance.....	St. J. & D. C. R. R.	902
Severy.....	A., T. & S. F. R. R.	1,088
Sheelock.....	A., T. & S. F. R. R.	2,876
Sheridan.....	K. P. R. R.	3,103
Sherlock.....		2,925
Short Creek.....	S. C. & J. R. R.	893
Sibley.....	K. C., L. & S. R. R.	817
Sidney.....	A., T. & S. F. R. R.	2,785
Sigel.....		753
Silica.....		1,779
Silver Lake.....	K. P. R. R.	915
Skiddy.....	M., K. & T. R. R.	1,236
Soloman City.....	Solomon R. R.	1,175
Do... Junction.....	Solomon R. R.	1,172
Sother.....	U. P. R. R.	1,179
South Haven.....	S. C. R. R.	1,134
South Mound.....	M., K. & T. R. R.	903
Spearville.....	A., T. & S. F. R. R.	2,449
Spencer.....	A., T. & S. F. R. R.	859
Springdale.....	A., T. & S. F. H. R.	1,032
Spring Hill.....	K. C., Ft. S. & G. R. R.	1,028
Stanley.....	A., T. & S. F. R. R.	972
Steel City.....		1,277

Station.	Authority.	Elevation.
		<i>Feet.</i>
Sterling.....	A., T. & S. F. R. R.....	1,635
Stilson.....	K. C., Ft. S. & G. R. R.....	909
Strawn.....	M., K. & T. R. R.....	1,047
Strong City.....	A., T. & S. F. R. R.....	1,172
Summit "Santa Fé Ridge".....	K. C., L. & S. R. R.....	1,068
Syracuse.....	A., T. & S. F. R. R.....	3,218
Tecumseh.....	A., T. & S. F. R. R.....	860
Terra Cotta.....	K. P. R. R.....	1,470
Thayer.....	K. C., L. & S.....	1,445
Tiblow.....	K. P. R. R.....	793
Tonganoxie.....	K. P. R. R.....	851
Topeka.....	A., T. & S. F. R. R.....	884
Troy.....	St. J. & D. C. R. R.....	1,091
Do Junction.....	A. & W. R. R.....	1,150
Turner.....	A., T. & S. F. R. R.....	762
Udall.....	A., T. & S. F. R. R.....	1,272
Urbana.....	M., K. & T. R. R.....	931
Valley Center.....	A., T. & S. F. R. R.....	1,339
Valley Falls Junction, Kansas Cent. R. R.....	A., T. & S. F. R. R.....	907
Vermillion.....	U. P. R. R.....	1,198
Victoria.....	K. P. R. R.....	1,923
Vinland.....	K. C., L. & S. R. R.....	881
Wabaunsee.....	A., T. & S. F. R. R.....	1,011
Wakarusa.....	A., T. & S. F. R. R.....	946
Wa Keeney.....	K. P. R. R.....	2,456
Wakefield.....	J. C. & Ft. R. R. R.....	1,152
Walker.....	K. P. R. R.....	1,944
Wallace.....	K. P. R. R.....	3,301
Walnut.....	M., K. & T. R. R.....	931
Walnut Ridge.....	A., T. & S. F. R. R.....	1,199
Walthena.....	St. J. & D. C. R. R.....	816
Walton.....	A., T. & S. F. R. R.....	1,527
Wamego.....	K. P. R. R.....	1,000
Washington.....	St. J. & D. C. R. R.....	1,316
Waterville.....	U. P. R. R.....	1,183
Weir City.....	M., K. & C. R. R.....	921
Welda.....	K. C., L. & S. R. R.....	1,098
Wellington.....	A., T. & S. F. R. R.....	1,219
Wellsville.....	K. C., L. & S. R. R.....	1,041
Wetmore.....	U. P. R. R.....	1,153
White City.....	M., K. & T. R. R.....	1,476
White Cloud.....	A. & N. R. R.....	858
Whiting.....	U. P. R. R.....	1,126
Wichita.....	A., T. & S. F. R. R.....	1,291
Wilder.....	A., T. & S. F. R. R.....	770
Williamstown.....	K. P. R. R.....	851
Wilson.....	K. P. R. R.....	1,684
Winchester.....	K. C. R. R.....	1,164
Winfield.....	A., T. & S. F. R. R.....	1,112
Wolf River Crossing.....	St. J. & D. C. R. R.....	819
Wyandotte.....	Smithsonian Inst.....	707
Zarah, Fort.....	.....	1,870

KENTUCKY.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Aden	C. & O. R. R.	626
Allensville	L., N. S. & N. A. R. R.	552
Alms House	L., N. S. & N. A. R. R.	425
Ashland	C. & O. R. R.	544
Athens	C. & O. R. R.	1,006
Anburn	L., N. S. & N. A. R. R.	603
Bacon Creek	L., N. S. & N. A. R. R.	619
Bakersport	Paducah & E. R. R.	477
Bank Lick	L., C. & L. R. R.	637
Bardstown	L., N. S. & N. A. R. R.	635
Do..... Junction.....	L., N. S. & N. A. R. R.	415
Beaver Dam	Paducah & E. R. R.	422
Belmont	L., N. S. & N. A. R. R.	429
Bethlehem	L., N. S. & N. A. R. R.	730
Big Clifty	Paducah & E. R. R.	733
Big Spring	L., N. S. & N. R. R.	512
Bishops	C. S. R. R.	587
Blanchet	C. S. R. R.	968
Booth's	L., N. S. & N. A. R. R.	423
Boston	L., N. S. & N. A. R. R.	429
Bowling Green	L., N. S. & N. A. R. R.	466
Bracht	C. S. R. R.	934
Bridge Fork	C. S. R. R.	1,318
Bristow	L., N. S. & N. A. R. R.	515
Brodhead	L., N. S. & N. A. R. R.	901
Brooks	L., N. S. & N. A. R. R.	428
Brunfield	L., N. S. & N. A. R. R.	1,012
Burgin	C. S. R. R.	902
Cadentown	C. & O. R. R.	1,034
Calvert City	Paducah & E. R. R.	494
Campbellsburgh	L., C. & L. R. R.	904
Cane Spring	L., N. S. & N. A. R. R.	621
Caneyville	Paducah & E. R. R.	450
Carrolton	L., C. & L. R. R.	472
Catlettsburg	C. & O. R. R.	544
Catnip Hill	C. S. R. R.	990
Cave City	L., N. S. & N. A. R. R.	611
Cave Spring	L., N. S. & N. A. R. R.	586
Cayce	M. & O. R. R.	400
Cecilia	Paducah & E. R. R.	688
Cecilian Junction	L., N. S. & N. A. R. R.	675
Cedar Grove	C. S. R. R.	851
Chicago	L., N. S. & N. A. R. R.	671
Cincinnati and Lexington Junction	L., N. S. & N. A. R. R.	435
Clinton	M. & O. R. R.	321
Colby	C. & O. R. R.	1,023
Colesburgh	L., N. S. & N. A. R.	423
Columbia	St. L., I. Mt. & S. R. R.	313
Columbus	M. & O. R. R.	309
Combs Ferry	E., L. & B. S. R. R.	954
Corinth	C. S. R. R.	968
Crab Orchard	L., N. S. & N. A. R. R.	917
Crittenden	C. S. R. R.	923
Cumberland Falls	C. S. R. R.	1,260
Danville	C. S. R. R.	970
Dixon	C. S. R. R.	936
Donerail	C. S. R. R.	897
Dry Ridge	C. S. R. R.	964

Station.	Authority.	Elevation.
		<i>Fert.</i>
Dulaney	Paducah & E. R. R.	684
Duncannon	L., N. S. & N. A. R. R.	987
Eagle	L., C. & L. R. R.	473
Earlington	E., H. & N. R. R.	370
East Kentucky Junction	C. & O. R. R.	613
East View	Paducah & E. R. R.	812
Eddyville	Paducah & E. R. R.	487
Elizabethtown	L., N. S. & N. A. R. R.	681
Elleston	L., C. & L. R. R.	593
Elm Lick	Paducah & E. R. R.	507
Enterprise	C. & O. R. R.	831
Erlanger	C. S. R. R.	915
Eubanks	C. S. R. R.	1,187
Ewington	C. & O. R. R.	992
Farmers	C. & O. R. R.	668
Flat Rock	C. S. R. R.	1,309
Franklin	L., N. S. & N. A. R. R.	689
Gates	C. & O. R. R.	819
Georgetown	C. S. R. R.	883
Gethsemane	L., N. S. & N. A. R. R.	456
Gilberts Creek	L., N. S. & N. A. R. R.	828
Gilbertsville	Paducah & E. R. R.	482
Glasgow	L., N. S. & N. A. R. R.	778
Do Junction	L., N. S. & N. A. R. R.	621
Glencoe	L., C. & L. R. R.	550
Glendale	L., N. S. & N. A. R. R.	638
Gordon	Paducah & E. R. R.	480
Gravel Switch	L., N. S. & N. A. R. R.	894
Grayson Springs Station	Paducah & E. R. R.	709
Grear Coal Mines	C. S. R. R.	1,325
Greendale	C. S. R. R.	957
Green River	C. S. R. R.	927
Greenville	Paducah & E. R. R.	537
Greenwood	C. S. R. R.	1,207
Gum Sulphur	L., N. S. & N. A. R. R. ....	.....
Guthrie	L., N. S. & N. A. R. R.	525
Do Crossing L. & M. R. R.	E., H. & N. R. R.	545
Hadensville	L., N. S. & N. A. R. R.	532
Hall's Gap	L., N. S. & N. A. R. R.	991
Hamilton	Paducah & E. R. R.	493
Harris	L., N. S. & N. A. R. R.	1,007
Harrodsburgh Junction	C. S. R. R.	915
Hatden's	L., N. S. & N. A. R. R.	821
Hedges	C. & O. R. R.	976
Henderson, L. W. in Ohio River	E., H. & N. R. R.	335
Do top of bank on railroad terminus	E., H. & N. R. R.	402
Herat	E., L. & B. S. R. R.	619
Hickman	N. & N. R. R.	301
High Bridge	C. S. R. R.	777
Hinton	C. S. R. R.	958
Hopkinsville	E., H. & N. R. R.	550
Horse Branch	Paducah & E. R. R.	527
Do tunnel, surface	Paducah & E. R. R.	782
Horse Cave	L., N. S. & N. A. R. R.	601
Hubers	L., N. S. & N. A. R. R.	456
Hyattsville	L., N. S. & N. A. R. R.	1,002
Independence	L., C. & L. R. R.	760
Jessamine	C. S. R. R.	901
Jordan	M. & O. R. R.	404
Junction	E., L. & B. S. R. R.	618
Junction City	C. S. R. R.	997
Kelly's Station	E., H. & N. R. R.	705
Kenton Heights	C. S. R. R.	845
King's Mountain	C. S. R. R.	1,183

Station.	Authority.	Elevation.
Kinkaid	C. S. R. R.	<i>Feet.</i> 877
Kuttawa	Paducah & E. R. R.	487
La Grange	L., C. & L. R. R.	860
Lancaster	L., N. S. & N. A. R. R.	997
Lawton's Bluff	Paducah & E. R. R.	506
Lebanon	L., N. S. & N. A. R. R.	752
Lebanon Junction	L., N. S. & N. A. R. R.	436
Leon	C. & O. R. R.	598
Lewis Crossing, tunnel, surface	Paducah & E. R. R.	611
Lexington	C. S. R. R.	975
Do	C. & O. R. R.	946
Do	L., C. & L. R. R.	867
Liberty	L., C. & L. R. R.	436
Litchfield	Paducah & E. R. R.	710
Livingston	L., N. S. & N. A. R. R.	856
Long Grove	Paducah & E. R. R.	636
Loretto	L., N. S. & N. A. R. R.	709
Louisville	L., N. S. & N. A. R. R.	438
Do	L., N. S. & N. A. R. R.	326
Do	U. S. Signal Office	530
Lowell	L., N. S. & N. A. R. R.	797
Ludlow	C. S. R. R.	550
Lulbebind	E., L. & B. S. R. R.	1,082
McHenry	Paducah & E. R. R.	483
McKinney	C. S. R. R.	1,023
MacLeod	L., N. S. & N. A. R. R.	608
McNary	Paducah & E. R. R.	478
Madisonville	E., H. & N. R. R.	435
Mason	C. S. R. R.	939
Maurice	L., C. & L. R. R.	508
Meadow Lawn	L., N. S. & N. A. R. R.	420
Memphis Junction	L., N. S. & N. A. R. R.	531
Mercers	Paducah & E. R. R.	522
Mewe	E., L. & B. S. R. R.	843
Millwood	Paducah & E. R. R.	654
Mitchellsburgh	L., N. S. & N. A. R. R.	967
Moran's Summit	L., N. S. & N. A. R. R.	962
Morehead	C. & O. R. R.	712
Moreland	C. S. R. R.	1,101
Moscow	M. & O. R. R.	313
Mount Guthrie	L., N. S. & N. A. R. R.	1,119
Mount Savage	C. & O. R. R.	601
Mount Sterling	C. & O. R. R.	934
Mount Vernon	L., N. S. & N. A. R. R.	1,111
Muhlenburgh	Paducah & E. R. R.	570
Muldraugh	L., N. S. & N. A. R. R.	738
Munfordville	L., N. S. & N. A. R. R.	568
Nazareth	L., N. S. & N. A. R. R.	691
Nelson Furnace	L., N. S. & N. A. R. R.	432
New Haven	L., N. S. & N. A. R. R.	442
New Hope	L., N. S. & N. A. R. R.	486
Newport	L., C. & L. R. R.	523
Nicholasville	C. S. R. R.	960
Nolin	L., N. S. & N. A. R. R.	658
Normal	C. & O. R. R.	539
North Fork	L., N. S. & N. A. R. R.	932
Nortonville	Paducah & E. R. R.	492
Do	E., H. & N. R. R.	410
Do	C. S. R. R.	1,137
Norwood	L., N. S. & N. A. R. R.	529
Oakland	L., N. S. & N. A. R. R.	451
Old Deposit	C. & O. R. R.	752
Olive Hill	C. & O. R. R.	752
Olmstead	L., N. S. & N. A. R. R.	561

Station.	Authority.	Elevation.
		<i>Feet.</i>
Olympia	C. & O. R. R.	751
Orel	L., N. S. & N. A. R. R.	410
Ottsville	Paducah & E. R. R.	528
Otter Creek	L., N. S. & N. A. R. R.	662
Owensborough Junction	Paducah & E. R. R.	495
Paducah	Paducah & E. R. R.	484
Paint Lick	L., N. S. & N. A. R. R.	792
Parksville	L., N. S. & N. A. R. R.	1,050
Patton's Water Tank	C. S. R. R.	1,143
Pendleton	L., C. & L. R. R.	838
Penick	L., N. S. & N. A. R. R.	928
Pine Grove	C. & O. R. R.	960
Pine Hill	L., N. S. & N. A. R. R.	964
Pine Knot	C. S. R. R.	1,428
Pleasant Valley	L., N. S. & N. A. R. R.	1,108
Pleasure Ridge Park	L., N. S. & N. A. R. R.	445
Point Burnside	C. S. R. R.	782
Preston	C. & O. R. R.	741
Prewitt	C. & O. R. R.	1,054
Princeton	Paducah & E. R. R.	624
Pulaski	C. S. R. R.	1,135
Quarry Switch	L., N. S. & N. A. R. R.	461
Randolph	L., N. S. & N. A. R. R.	435
Red Hill	L., N. S. & N. A. R. R.	749
Richmond	L., N. S. & N. A. R. R.	924
Do..... Junction	L., N. S. & N. A. R. R.	842
Richwood	C. S. R. R.	939
Riley's	L., N. S. & N. A. R. R.	912
Rineyville	L., N. S. & N. A. R. R.	806
Robard's Station	E., H. & N. R. R.	390
Rockfield	L., N. S. & N. A. R. R.	566
Rockport, Green River	Paducah & E. R. R.	485
Rocky Hill	L., N. S. & N. A. R. R.	594
Roger's Gap	C. S. R. R.	928
Rosine	Paducah & E. R. R.	597
Rowlett's	L., N. S. & N. A. R. R.	608
Russellville	L., N. S. & N. A. R. R.	532
Sadieville	C. S. R. R.	872
Saint Barnard	Paducah & E. R. R.	488
Saint Charles	Paducah & E. R. R.	509
Saint Mary's	L., N. S. & N. A. R. R.	731
Salt Lick	C. & O. R. R.	656
Samuel's	L., N. S. & N. A. R. R.	650
Sandersville	C. S. R. R.	961
Sayer's	L., N. S. & N. A. R. R.	672
Science Hill	C. S. R. R.	1,130
Scottsburgh	Paducah & E. R. R.	667
Shepherdsville	L., N. S. & N. A. R. R.	424
Sherman	C. S. R. R.	939
Silver Creek	L., N. S. & N. A. R. R.	802
Sloan's Valley	C. S. R. R.	926
Smith's Grove	L., N. S. & N. A. R. R.	605
Somerset	C. S. R. R.	882
Sonora	L., N. S. & N. R. R.	697
South Covington	L., C. & L. R. R.	537
South Danville	L., N. S. & N. A. R. R.	967
South Fork	C. S. R. R.	991
South Union	L., N. S. & N. A. R. R.	517
Sparta	L., C. & L. R. R.	505
Spring Lick	Paducah & E. R. R.	438
Stanford	L., N. S. & N. A. R. R.	919
Stepstone	C. & O. R. R.	777
Stevensburg	Paducah & E. R. R.	662
Stithton	L., N. S. & N. A. R. R.	682

Station.	Authority.	Elevation.
		<i>Fet.</i>
Strawberry	L., N. S. & N. A. R. R.	430
Sulphur	L., C. & L. R. R.	691
Tateville	C. S. R. R.	887
Thompson's	C. & O. R. R.	1,037
Tibbs	E., L. & B. S. R. R.	967
Tip Top	L., N. S. & N. A. R. R.	738
Tradewater	Paducah & E. R. R.	507
Triplett	C. & O. R. R.	950
Turner's	L., C. & L. R. R.	748
Tygart	C. & O. R. R.	777
Upton	L., N. S. & N. A. R. R.	722
Valley	L., N. S. & N. A. R. R.	410
Verona	L., C. & L. R. R.	870
Vine Grove	L., N. S. & N. A. R. R.	719
Walton	C. S. R. R.	927
Waynesburgh	C. S. R. R.	1,230
West Chatteroi Junction	C. & O. R. R.	533
West Point	L., N. S. & N. A. R. R.	410
Whippoorwill	L., N. S. & N. A. R. R.	537
White Oak	C. S. R. R.	971
White Plains	Paducah & E. R. R.	477
Whitley	C. S. R. R.	1,336
Whitney	C. S. R. R.	872
Williamstown	C. S. R. R.	958
Wilmore	C. S. R. R.	887
Winchester	C. & O. R. R.	964
Windom	C. S. R. R.	1,034
Woodburn	L., N. S. & N. A. R. R.	608
Woodland	L., N. S. & N. A. R. R.	621
Worthville	L., C. & L. R. R.	486
Zim	L., C. & L. R. R.	679

LOUISIANA.

Station.	Authority.	Elevation.
		<i>Fect.</i>
Algiers	Morgan's L. & T. R. R.....	11
Baldwin	Morgan's L. & T. R. R.....	16
Bayou Salé	Morgan's L. & T. R. R.....	10
Berwick	Morgan's L. & T. R. R.....	6
Boeuf	Morgan's L. & T. R. R.....	2
Boutte	Morgan's L. & T. R. R.....	6
Broussardville	Morgan's L. & T. R. R.....	40
Carencro	Morgan's L. & T. R. R.....	45
Chatahoula	Morgan's L. & T. R. R.....	6
Chef Menteur	N. O., M. & T. R. R.....	9
Des Allemands	Morgan's L. & T. R. R.....	4
Franklin	Morgan's L. & T. R. R.....	13
Grand Coteau	Morgan's L. & T. R. R.....	51
Jeannerette	Morgan's L. & T. R. R.....	22
Lake Charles	Toner	22
Morgan City	Morgan's L. & T. R. R.....	6
New Iberia	Morgan's L. & T. R. R.....	22
New Orleans	Jackson & Gt. N. R. R.....	4
Do	Pontchartrain R. R.....	15
Do	N. O., M. & T. R. R.....	16
Do	Signal Station.....	52
Opelousas	U. S. Signal Office.....	59
Pattersonville	Morgan's L. & T. R. R.....	9
Port Eads, South Pass, Signal Station	U. S. Signal Office.....	7
Raceland	Morgan's L. & T. R. R.....	6
Rigolets	N. O., M. & T. R. R.....	9
Shreveport	T. & P. R. R.....	198
Do	Signal Station.....	227
Slidell	U. S. Signal Office.....	8
Sorrell	N. O. & N. E. R. R.....	20
Surel	Morgan's L. & T. R. R.....	20
Terre Bonne	Morgan's L. & T. R. R.....	16
Tigerville	Morgan's L. & T. R. R.....	4
Vermillionville	Morgan's L. & T. R. R.....	42
Washington	Morgan's L. & T. R. R.....	42
West Pearl River	N. O. & N. E. R. R.....	30

MAINE.

Station.	Authority.	Elevation.
Abraham, Mount.....	Geol. Survey of Maine.....	3,382
Agamenticus, Mount.....	Toner.....	673
Alleguash, Lake.....	Water-power of Maine.....	950
Attean, Lake.....	Water-power of Maine.....	1,094
Auburn.....	Me. Cent. R. R.....	184
Angusta.....	Me. Cent. R. R.....	48
Bancroft.....	European & N. A. R. R.....	333
Bangor.....	Me. Cent. R. R.....	13
Do.. Thomas Hill.....	U. S. C. & G. S.....	242
Do.. Exchange street.....	European & N. A. R. R.....	11
Do.. Signal Station.....	U. S. Signal Office.....	29
Barker's Mountain.....	Toner.....	2,551
Basin Mills.....	European & N. A. R. R.....	56
Baskahegan, Lake.....	Water-power of Maine.....	400
Belfast, City Point.....	Me. Cent. R. R.....	29
Bethel.....	Grand Trunk R. R.....	646
Bowdoinham.....	Me. Cent. R. R.....	19
Brewer.....	Bucksport & Bangor R. R.....	34
Brewer Village.....	Bucksport & Bangor R. R.....	24
Brooks.....	Me. Cent. R. R.....	376
Brownfield.....	Port. & Ogden. R. R.....	326
Brunswick.....	Me. Cent. R. R.....	64
Bryant's Pond.....	Grand Trunk R. R.....	706
Bucksport.....	Bucksport and Bangor R. R.....	5
Bucksport Center.....	Bucksport and Bangor R. R.....	99
Burnham.....	Me. Cent. R. R.....	157
Conquogomoc Lake.....	Water-power of Maine.....	930
Chamberlain Lake.....	Water-power of Maine.....	926
Chesuncook, Lake.....	Water-power of Maine.....	900
Chiputneticook, Lake.....	Water power of Maine.....	382
Chiputneticook, Lake, Grand.....	Water-power of Maine.....	449
Churchill Lake.....	Water-power of Maine.....	914
Clinton.....	Me. Cent. R. R.....	133
Costigan.....	European & N. A. R. R.....	111
Cumberland Junction.....	Me. Cent. R. R.....	59
Cumberland.....	Me. Cent. R. R.....	56
Do.....	Grand Trunk R. R.....	83
Curtis Corner.....	Me. Cent. R. R.....	331
Danforth.....	European & N. A. R. R.....	379
Danville June.....	Grand Trunk R. R.....	200
Denning's Lake.....	Toner.....	88
East Baldwin Station.....	Port. & Ogden. R. R.....	312
East Concord.....	Port. & Ogden. R. R.....	881
East Livermore.....	Me. Cent. R. R.....	327
Eastport, Signal Station.....	U. S. Signal Office.....	61
Eaton.....	European & N. A. R. R.....	400
Empire Road.....	Grand Trunk R. R.....	278
Enfield.....	European & N. A. R. R.....	190
Falmouth.....	Grand Trunk R. R.....	49
Fish River Lake.....	Water-power of Maine.....	660
Forest.....	European & N. A. R. R.....	435
Freeport.....	Me. Cent. R. R.....	127
Fryeburgh Station.....	Port. & Ogden. R. R.....	430
Gardiner.....	Me. Cent. R. R.....	23
Gilead.....	Grand Trunk R. R.....	711
Gray.....	Me. Cent. R. R.....	106
Great Works.....	European & N. A. R. R.....	85
Green.....	Me. Cent. R. R.....	297
Greenbush.....	European & N. A. R. R.....	124

Station.	Authority.	Elevation.
		<i>Feet.</i>
Hallowell	Me. Cent. R. R.	54
Harwood's Road	Me. Cent. R. R.	17
Howard	U. S. C. & G. S.	269
Katahdin, Mount	Eastman	5,200
Kendall's Mills	Me. Cent. R. R.	122
Kingman	European & N. A. R. R.	395
Lambert Lake	European & N. A. R. R.	417
Leeds Centre	Me. Cent. R. R.	265
Leeds Crossing	Me. Cent. R. R.	271
Leeds Depot	Me. Cent. R. R.	266
Lewiston	Me. Cent. R. R.	200
Lincoln	European & N. A. R. R.	205
Lincoln Centre	European & N. A. R. R.	167
Locke's Mills	Grand Trunk R. R.	718
Long Lake	Water-power of Maine	603
Long Pond	Water-power of Maine	1,094
Lunenburg	Port. & Ogden. R. R.	850
Mattagamon	Water-power of Maine	850
Mattawamkeag	European & N. A. R. R.	205
Mattinicus West Light	U. S. C. & G. S.	37
Mechanic Falls	Grand Trunk R. R.	298
Miles' Pond	Port. & Ogden. R. R.	1,025
Milford	European & N. A. R. R.	114
Milinoquet, Lake	Water-power of Maine	500
Monmouth	Me. Cent. R. R.	206
Moosehead Lake	Water-power of Maine	1,023
Moosetocmaguntic Lake	Water-power of Maine	1,486
Mount Desert	U. S. C. & G. S.	1,527
New Gloucester	Me. Cent. R. R.	113
Newport	Me. Cent. R. R.	200
North Leeds	Me. Cent. R. R.	290
North Yarmouth	Grand Trunk R. R.	100
Oak Hill	Me. Cent. R. R.	125
Olamon	European & N. A. R. R.	121
Oldtown	European & N. A. R. R.	68
Orono	European & N. A. R. R.	71
Orrington	Bucksport & Bangor R. R.	146
Owl's Head Light	U. S. C. & G. S.	56
Oxford	Grand Trunk R. R.	331
Pamedumcook Lake	Water-power of Maine	500
Paris	Grand Trunk R. R.	483
Passadumkeag	European & N. A. R. R.	131
Pawnal	Grand Trunk R. R.	143
Pigeon Hill	U. S. C. & G. S.	315
Pittsfield	Me. Cent. R. R.	210
Pleasant, Mount	Guyot	2,021
Pomgocwahem Lake	Water-power of Maine	914
Portage Lake	Water-power of Maine	625
Portland	Me. Cent. R. R.	13
Do	Grand Trunk R. R.	15
Do	Portland & Roch R. R.	10
Do..copper bolt at G. T. R. R. freight house	Port. & Ogden. R. R.	16
Do..Brownhall Hill	U. S. C. & G. S.	176
Do..R. R. wharf	U. S. C. & G. S.	4
Do..Signal Station	U. S. Signal Office	45
Pownal	Grand Trunk R. R.	143
Prince Regent's Redoubt	U. S. C. & G. S.	197
Ragged Mountain	U. S. C. & G. S.	1,301
Rangeley Lake	Water-power of Maine	1,511
Richardson, Lake	Water-power of Maine	1,456
Richmond	Me. Cent. R. R.	77
Richville Station (Standish)	Port. & Ogden, R. R.	315

Station.	Authority.	Elevation.
Ripogenus, Lake	Water-power of Maine	<i>Feet.</i> 878
Schoodic Lake	Water-power of Maine	390
Sebago, Lake	Water-power of Maine	247
Do..... Station (Standish).....	Port. & Ogden. R. R.	274
Do..... (water surface).....	Port. & Ogden. R. R.	263
Sebattis Mountain	U. S. C. & G. S.	801
Sebec Lake	Water-power of Maine	375
South Gardiner	Me. Cent. R. R.	25
South Orrington	Bucksport & Bangor R. R.	34
South Paris	Grand Trunk R. R.	329
South Winn	European & N. A. R. R.	194
Square-and-Cross Lake.....	Water-power of Maine	527
Squawpan Lake	Water-power of Maine	520
Standish Plains (natural surface).....	Port. & Ogden. R. R.	229
Steep Falls Station (Standish).....	Port. & Ogden. R. R.	305
Strickland's Ferry	Me. Cent. R. R.	305
Tenant's Harbor Light	U. S. C. & G. S.	44
Thorndyke	Me. Cent. R. R.	267
Tomat	European & N. A. R. R.	375
Topsham	Me. Cent. R. R.	43
Umbagog Lake	Water-power of Maine	1,256
Unity	Me. Cent. R. R.	223
Vanceborough	European & N. A. R. R.	394
Veazie	European & N. A. R. R.	110
Walnut Hill	Me. Cent. R. R.	120
Waterville	Me. Cent. R. R.	117
Webster	European & N. A. R. R.	62
West Baldwin Station.....	Port. & Ogden. R. R.	364
West Bethel	Grand Trunk R. R.	675
Westbrook	Me. Cent. R. R.	101
Do..... Station, crossing Port. & Roch. R. R.	Port. & Ogden. R. R.	19
West Falmouth	Me. Cent. R. R.	43
West Paris	Grand Trunk R. R.	433
White Head Light	U. S. C. & G. S.	44
White Rock Station (Gorham).....	Port. & Ogden. R. R.	213
Wilderness	European & N. A. R. R.	467
Windham Station (south)	Port. & Ogden. R. R.	131
Winn	European & N. A. R. R.	201
Winthrop	Me. Cent. R. R.	230
Woodford's	Me. Cent. R. R.	61
Wood Lake	Water-power of Maine	1,094
Wytopitlock	European & N. A. R. R.	343
Yarmouth	Me. Cent. R. R.	88
Do.....	Grand Trunk R. R.	94
Do..... Junction	Grand Trunk R. R.	88

MARYLAND.

Station.	Authority.	Elevation.
		<i>Feet.</i>
.....	P. W. & B. R. R.	758
.....	D. & D. R. R.	74
al College.....	U. S. C. & G. S.	258
.....	B. & H. R. R.	702
.....	B. & O. R. R.	620
B. M. (a)	U. S. C. & G. S.	4
B. M. (b)	U. S. C. & G. S.	4
B. M., church on West street	U. S. C. & G. S.	43
reek	W. Md. R. R.	460
.....	C. & P. D. R. R.	80
.....	W. Md. R. R.	420
.....	W. Md. R. R.	540
al. Grove.....	B. & H. R. R.	741
.....	C. & P. D. R. R.	78
.....	B. & O. R. R.	24
anton wharf.....	W. Md. R. R.	20
ast facade of tunnel.....	B. & P. R. R.	67
Pennsylvania avenue	B. & P. R. R.	131
LaFayette avenue	B. & P. R. R.	164
Salverton road	B. & P. R. R.	133
Frederick road	B. & P. R. R.	154
Mount Clare Station	B. & P. R. R.	68
President street depot	P. W. & B. R. R.	9
Signal Station.....	U. S. Signal Office	45
.....	B. & O. R. R.	500
.....	B. & O. R. R.	463
unction, Union Railroad.....	P. W. & B. R. R.	36
mmitt	B. & O. R. R.	678
.....	B. & P. R. R.	35
rg, meeting house	U. S. C. & G. S.	51
on—B. M. on top step northwest		
& O. Railroad bridge over Potomac	U. S. C. & G. S.	1,008
Summit.....	W. Md. R. R.	1,373
.....	B. & P. R. R.	149
.....	B. & O. R. R.	418
ille.....	B. & O. R. R.	472
e.....	B. & O. R. R.	535
, high water at	D. & D. R. R.	57
railroad grade.....	D. & D. R. R.	62
.....	W. Md. R. R.	550
rn	P. W. & B. R. R.	39
.....	P. W. & B. R. R.	20
.....	W. Md. R. R.	575
.....	B. & O. R. R.	619
.....	E. S. R. R.	3
id.....	Cumberland & Pennsylvania R. R.	639
.....	Cumberland Turnpike	635
.....	Penna. R. R.	642
.....	B. & O. R. R.	639
..B. M. on coping stone of feed-lock west terminus of Chesapeake and Ohio Canal	U. S. C. & G. S.	624
..Basin Chesapeake and Ohio Canal	C. & O. Canal	609
s.....	C. & O. Canal	357
te Creek	W. Md. R. R.	300
ll	B. & O. R. R.	412

Station.	Authority.	Elevation.
		<i>Ft.</i>
East Federalburgh	D. & D. R. R.	71
East New Market	D. & D. R. R.	99
Edgewood	P. W. & B. R. R.	30
Elkton	P. W. & B. R. R.	29
Ellerslie	B. & O. R. R.	79
Emory Grove Station, junction Western Maryland Railroad	B. & H. R. R.	63
Fairview	B. & H. R. R.	67
Frederick	Pa. R. R.	29
Do	W. Md. R. R.	43
Do... Junction	B. & O. R. R.	34
Freelands	N. C. R. R.	36
Frostburgh	Cumberland Turnpike	1,290
Do	Cumberland & Pennsylvania R. R.	1,290
Gaithersburgh	B. & O. R. R.	516
Galt's	Pa. R. R.	486
Georgetown	Pa. R. R.	29
Germantown	B. & O. R. R.	42
Glendale	B. & P. R. R.	150
Glen Falls	W. Md. R. R.	375
Glen Morris	W. Md. R. R.	58
Glyndon	W. Md. R. R.	600
Graceham	W. Md. R. R.	400
Green Mount	B. & H. R. R.	800
Greenwood	W. Md. R. R.	425
Grimes	Shenandoah Valley R. R.	324
Gunpowder Bridge	P. W. & B. R. R.	978
Hagerstown	Shenandoah Valley R. R.	506
Do	W. Md. R. R.	520
Do	Cumberland Valley R. R.	572
Do	B. & O. R. R.	527
Do... Junction	B. & O. R. R.	249
Do..... B. M. on water table of C. H. corner Washington and Jon- athan streets	U. S. C. & G. S.	552
Hampstead	B. & H. R. R.	880
Hancock, B. M. on coping stone of lock 53, Chesapeake and Ohio Canal aqueduct	U. S. C. & G. S.	474
Do... B. M. on coping stone middle north side Chesapeake and Ohio Canal aqueduct	U. S. C. & G. S.	421
Harmans	B. & P. R. R.	126
Harmony Grove	Pa. R. R.	310
Havre de Grace	Pa. R. R.	16
Howardsville	W. Md. R. R.	455
Hurlock's	D. & D. E. R.	104
Junction	W. Md. R. R.	460
Keedysville	B. & O. R. R.	36
Knowles	B. & O. R. R.	226
Ladiesburgh	Pa. R. R.	464
Lanham's	B. & P. R. R.	143
Linkwood	D. & D. R. R.	78
Linsted	U. S. C. & G. S.	158
Linwood	W. Md. R. R.	320
Lonaconing	Cumberland & Pennsylvania R. R.	1,560
Loys	W. Md. R. R.	300
Magnolia	P. W. & B. R. R.	28
Marriott	U. S. C. & G. S.	249
Martinsburg, junction with B. & O. R. R. ..	Cumberland Valley R. R.	634
Maryland Heights	U. S. C. & G. S.	1,456
Mechanicstown	W. Md. R. R.	520

Station.	Authority.	Elevation.
		<i>Feet.</i>
Middleburgh	W. Md. R. R.	415
Monocacy River	W. Md. R. R.	280
Mount Airy	B. & O. R. R.	813
Mount Hope	W. Md. R. R.	440
Mount Savage	Cumberland & Pennsylvania R. R.	1,206
Do Junction	B. & O. R. R.	687
Do Station	B. & O. R. R.	703
Mount Vernon	N. C. R. R.	131
New Midway	Pa. R. R.	458
New Windsor	W. Md. R. R.	440
North East	P. W. & B. R. R.	43
Oakland	B. & O. R. R.	2,371
Oakland	W. Md. R. R.	380
Odenton	U. S. C. & G. S.	164
Do. (A. & E. R. R.)	B. & P. R. R.	160
Owing's Mills	W. Md. R. R.	480
Parkton	N. C. R. R.	420
Patapsco	W. Md. R. R.	360
Patuxent	U. S. C. & G. S.	84
Do	B. & P. R. R.	85
Pen Mar	W. Md. R. R.	1,200
Perrymansville	P. W. & B. R. R.	42
Perryville, Port Deposit Br. R. R.	P. W. & B. R. R.	21
Piedmont	Cumberland & Pennsylvania R. R.	928
Pikesville	W. Md. R. R.	435
Point of Rocks, junction with main line B. & O. R. R.	B. & O. R. R.	229
Port Deposit	C. & P. D. R. R.	9
Potomac Bridge	Cumberland Valley R. R.	376
Princess Anne	E. S. R. R.	14
Relay Station	B. & O. R. R.	66
Rohrersville	B. & O. R. R.	591
Ritter's	Pa. R. R.	309
Rockville	B. & O. R. R.	421
Rocky Ridge	W. Md. R. R.	370
Sabillasville	W. Md. R. R.	1,120
Saint James	Shenandoah Valley R. R.	467
Salisbury	E. S. R. R.	26
Seabrook	B. & P. R. R.	159
Severn	B. & P. R. R.	166
Sharpsburgh	Shenandoah Valley R. R.	445
Silver Spring	B. & O. R. R.	336
Smithsburgh	W. Md. R. R.	750
Soper	U. S. C. & G. S.	469
Springfield	B. & P. R. R.	167
Stabler	U. S. C. & G. S.	571
Stimmer's Run	P. W. & B. R. R.	24.50
Stoney Run	B. & P. R. R.	61
Sugar-Loaf Mountain	U. S. C. & G. S.	1,281
Susquehanna, Susquehanna River	P. W. & B. R. R.	16
Sykesville	B. & O. R. R.	410
Taneytown	Pa. R. R.	493
Tannery	W. Md. R. R.	610
Taylor	U. S. C. & G. S.	95
Terra Cotta	B. & O. R. R.	168
Timber Grove	W. Md. R. R.	550
Timonium	N. C. R. R.	381
Tuscarawa	B. & O. R. R.	224
Union Bridge	W. Md. R. R.	350
Washington Junction	B. & O. R. R.	229
Webb	U. S. C. & G. S.	236
Westminster	W. Md. R. R.	700

Station.	Authority.	Elev.
Weverton.....	B. & O. R. R.....	
Williamsburgh.....	D. & D. R. R.....	
Williamsport.....	W. Md. R. R.....	
Do.....B. M. on top of stone of west side aqueduct C. & O. Canal....	U. S. C. & G. S.....	
Wilsons.....	B. & P. R. R.....	
Winans.....	B. & P. R. R.....	
Woodensburgh.....	B. & H. R. R.....	
Woodsborough.....	Pa. R. R.....	

MASSACHUSETTS.

Station.	Authority.	Elevation.
Acton, junction with Framingham & Lowell R. R.	N., A. & B. R. R.	<i>Feet.</i> 44
Allston	Boston & Albany R. R.	24
Amherst	N. L. N. R. R.	258
Do	Mass. Cent. R. R.	235
Ashburnham	Vt. & Mass. R. R.	1, 106
Do	Cheshire R. R.	1, 084
Ashland	Boston & Albany R. R.	184
Athol, junction with Vt. & Mass. R. R.	Spring., Athol & Northern R. R.	546
Attleborough	Bost. & Prov. R. R.	129
Anburndale	Boston & Albany R. R.	63
Ayer Junction	Worcester & Nashua R. R.	230
Bald Peak	Guyot	2, 624
Baldwinsville	Boston & Albany R. R.	901
Do	Fitchburg R. R.	891
Bandville	Mass. Cent. R. R.	405
Bardwell	N. H. & Northampton R. R.	238
Barnstable	Cape Cod R. R.	57
Barre Plains	Boston & Albany R. R.	588
Barrett's Junction, crossing N., L. & N. R. R.	Spring., Athol & Northern R. R.	329
Becket	Bost. & Albany R. R.	1, 207
Belchertown	Mass. Cent. R. R.	460
Belmont	Mass. Cent. R. R.	73
Bernardstown	Conn. River R. R.	359
Billerica	Boston & Albany R. R.	110
Blackstone	Prov. & Worces. R. R.	197
Bondville	Spring., Athol & Northern R. R.	350
Boston, B. & M. R. R. station	Boston & Maine R. R.	14
Do. sidewalk in front of B. & M. R. R. station	City Engineer	8
Do. Mass. Cent. R. R. station	Mass. Cent. R. R.	10
Do. Fitchburg R. R. station	Fitchburg R. R.	11
Do. sidewalk in front of Fitchburg R. R. station	City Engineer	6
Do. B. & P. R. R. station	Bost. & Prov. R. R.	6
Do. sidewalk in front of B. & P. R. R. station	City Engineer	7
Do. B. & A. R. R. station	Boston & Albany R. R.	10
Do. sidewalk in front of B. & A. R. R. station	City Engineer	7
Do. B. & L. R. R. station	Boston & Lowell R. R.	12
Do. sidewalk in front of B. & L. R. R. station	City Engineer	6
Do. Signal Station	U. S. Signal Office	142
Boylston	Bost. & Prov. R. R.	31
Braggsville	Boston & Albany R. R.	243
Brighton	Boston & Albany R. R.	24
Brookfield	Boston & Albany R. R.	606
Brookline	Boston & Albany R. R.	15
Do. Junction	Boston & Albany R. R.	9
Brooks' Farm	Boston & Lowell R. R.	30
Canton Junction	Bost. & Prov. R. R.	101
Charlton	Boston & Albany R. R.	888
Chester	Boston & Albany R. R.	595
Chicopee	Conn. River R. R.	79
Clarendon Hills	Bost. & Prov. R. R.	50
Clinton	Worcester & Nashua R. R.	309
Coldbrook	Boston & Albany R. R.	672
College Hill	Boston & Lowell R. R.	31
Concord	Fitchburg R. R.	135
Cordaville	Boston & Albany R. R.	248
Cottage Farm	Boston & Albany R. R.	9
Dalton	Boston & Albany R. R.	1, 196

Station.	Authority.	Elevation.
Deerfield.....	Conn. River R. R.....	221
Dennyville.....	Mass. Cent. R. R.....	225
Dodgeville.....	Bost. & Prov. R. R.....	114
Dorchester Heights.....	U. S. C. & G. S.....	140
Douglass Summit.....	Boston & N. Y. R. R.....	630
Dunstable, road to Dunstable Station.....	N., A. & B. R. R.....	51
Do..... Wall Hill.....	N., A. & B. R. R.....	88
Dwight's.....	Mass. Cent. R. R.....	245
Eagle Mills.....	Mass. Cent. R. R.....	555
East Brookfield.....	Boston & Albany R. R.....	621
East Douglas.....	Boston & N. Y. R. R.....	517
East Foxborough.....	Bost. & Prov. R. R.....	211
Eastham.....	Cape Cod R. R.....	18
Easthampton.....	N. H. & Northampton R. R.....	169
East Holliston.....	Boston & Albany R. R.....	109
East Junction.....	Bost. & Prov. R. R.....	108
East Mountain (copper bolt).....	Appalachian Club.....	2,276
Do..... (south peak).....	Appalachian Club.....	1,917
East Woburn.....	Boston, Lowell & Nashua R. R.....	33
Enfield.....	Spring., Athol & Northern R. R.....	415
Faneuil.....	Boston & Albany R. R.....	21
Farnum's.....	Prov. & Worcester R. R.....	281
Fitchburgh.....	Fitchburg R. R.....	431
Florence.....	N. H. & Northampton R. R.....	27
Forest Hills.....	Bost. & Prov. R. R.....	3
Foxborough.....	Framingham & Mansfield R. R.....	28
Framingham Center.....	Bost., Clinton & Fitchburg R. R.....	18
Franklin.....	Boston & N. Y. R. R.....	29
Fremont or N. Wareham.....	Cape Cod R. R.....	0
Gardner.....	Fitchburg R. R.....	1,00
Gilbertville.....	Boston & Albany R. R.....	54
Grafton.....	Boston & Albany R. R.....	36
Grantville.....	Boston & Albany R. R.....	14
Greenfield.....	V., M., T. & G. R. R.....	18
Green Lodge.....	Bost. & Prov. R. R.....	5
Greenwich.....	Spring., Athol & Northern R. R.....	45
Greenwich Village.....	Spring., Athol & Northern R. R.....	48
Greylock.....	Appalachian Club.....	3,53
Do.....	.....	3,56
Groton.....	Worcester & Nashua R. R.....	36
Do..... Cow Pond Brook.....	N., A. & B. R. R.....	1
Groton Junction.....	Worcester & Nashua R. R.....	22
Do.....	Fitchburg R. R.....	22
Hadley.....	Mass. Cent. R. R.....	11
Harvard.....	Worcester & Nashua R. R.....	25
Hatfield.....	Conn. River R. R.....	14
Haverhill.....	Boston & Maine R. R.....	1
Haydensville.....	N. H. & Northampton R. R.....	41
Heath.....	Bost. & Prov. R. R.....	5
Hinsdale.....	Boston & Albany R. R.....	1,4
Holden.....	Mass. Cent. R. R.....	71
Holliston.....	Boston & Albany R. R.....	11
Holyoke.....	Conn. River R. R.....	1
Holyoke, Mount.....	Toner.....	1,1
Hoosac, Mount.....	Toner.....	2,5
Do..... east summit over tunnel.....	V., M., T. & G. R. R. R.....	2,2
Hoosac Tunnel, east portal.....	Troy & Greenfield R. R.....	71
Do..... central shaft.....	Troy & Greenfield R. R.....	8
Do..... west portal.....	Troy & Greenfield R. R.....	71
Hudson.....	Mass. Cent. R. R.....	2
Huntington.....	Boston & Albany R. R.....	3
Hyannis.....	Cape Cod R. R.....	1
Hyde Park.....	Bost. & Prov. R. R.....	1
Indian Orchard.....	Boston & Albany R. R.....	2

Station.	Authority.	Elevation.
		<i>Feet.</i>
a Plain	Bost. & Prov. R. R.	33
ille	Boston & Albany R. R.	564
rossing	Boston & Albany R. R.	168
ter	Worcester & Nashua R. R.	259
ice	Manch. & Lawrence R. R.	65
	N. H. & Northampton R. R.	356
ster	Fitchburg R. R.	373
l	Fitchburg R. R.	205
on	Fitchburg R. R.	228
	Bost., Lowell & Nashua R. R.	99
Middlesex street	Boston & Lowell R. R.	92
Junction	Lowell & Andover R. R.	103
Rock Cut	Boston & Lowell R. R.	108
	Spring., Athol & North'n R. R.	239
burgh	Fitchburg R. R.	375
	Lowell & Andover R. R.	151
ld	Bost. & Prov. R. R.	169
junction with Bost. & Prov. R. R.	Framingham & Mansf'd R. R.	172
rough	Bost., Clinton & Fitch. R. R.	378
	Boston & Maine R. R.	62
's	Boston & Albany R. R.	242
orough	Cape Cod R. R.	96
ield	Boston & Albany R. R.	918
l Centre	Framingham & Mansf'd R. R.	171
l Junction	Framingham & Mansf'd R. R.	136
	Boston & Albany R. R.	244
y	Boston & Albany R. R.	393
Falls	N. L. N. R. R.	292
e	Prov. & Worces. R. R.	208
ne Depot	V., M., T. & G. R. R.	129
ant	Cape Cod R. R.	7
et	Boston & Lowell R. R.	20
	U. S. C. & G. S.	128
Tower's Tavern	U. S. C. & G. S.	11
et Cliff, Nantucket	U. S. C. & G. S.	58
	Boston & Albany R. R.	170
yport	U. S. C. & G. S.	124
lem	Spring., Athol & North'n R. R.	522
	Boston & Albany R. R.	46
ville	Boston & Albany R. R.	57
dams	Troy & Greenfield R. R.	696
npton	Conn. River R. R.	125
shburnham	Cheshire R. R.	1,066
illerica	B. & L. R. R.	120
rough	Bost., Clinton & Fitch. R. R.	296
idge	Prov. & Worces. R. R.	269
ana	Spring., Athol & North'n R. R.	462
astham	Cape Cod R. R.	54
atfield	Conn. River R. R.	172
vilbraham	Boston & Albany R. R.	264
rentham	Boston & N. Y. R. R.	222
	Worcester & Nashua R. R.	382
nace	Mass. Cent. R. R.	561
	Boston & Albany R. R.	581
	Cape Cod R. R.	44
	Boston & Albany R. R.	336
	Worcester & Nashua R. R.	205
d	Boston & Albany R. R.	1,013
unction	Boston, Clinton & Fitchburg R. R.	429
amond Lake	Toner	361
le	Bost. & Prov. R. R.	61
rossing	Boston & Albany R. R.	106
nd	Boston & Albany R. R.	1,047

Station.	Authority.	Elevation.
Richmond Furnace	Boston & Albany R. R.	1,000
Riverside	Boston & Albany R. R.	6
Rochdale	Boston & Albany R. R.	78
Roxbury	Bost. & Prov. R. R.	9
Russell	Boston & Albany R. R.	27
Rutland Summit	Mass. Cent. R. R.	1,945
Sandwich	Cape Cod R. R.	1
Saundersville	Prov. & Worcester R. R.	31
Sawyer's Mills	Mass. Cent. R. R.	39
Shaker Village	Boston & Albany R. R.	1,111
Sharon	Bost. & Prov. R. R.	22
Sharon Heights	Bost. & Prov. R. R.	26
Shelburne Falls	Troy & Greenfield R. R.	43
Sherborn	Framingham & Mansfield R. R.	17
Shirley	Fitchburg R. R.	28
Smith's	Spring, Athol & Northern R. R.	42
Smith's Ferry	Conn. River R. R.	12
Somerville	Fitchburg R. R.	1
Somerville Centre	Boston & Lowell R. R.	1
South Acton	Fitchburg R. R.	15
Southampton	N. H. & Northampton R. R.	11
South Ashburnham Junction	Cheshire R. R.	1,010
South Athol	Spring, Athol & Northern R. R.	54
Southborough	Boston, Clinton & Fitchburg R. R.	26
South Dedham	Boston & N. Y. R. R.	14
South Deerfield	Conn. River R. R.	28
South Framingham	Boston & Albany R. R.	11
South Lancaster	Worcester & Nashua R. R.	2
South Lawrence	Boston & Maine R. R.	1
South Spencer	Boston & Albany R. R.	71
Southville	Boston & Albany R. R.	29
South Walpole	Framingham & Mansfield R. R.	2
South Wellfleet	Cape Cod R. R.	1
Southwick	N. H. & Northampton R. R.	2
South Worcester	Prov. & Worcester R. R.	40
Springfield	Boston & Albany R. R.	1
Do Indian Orchard Station	Boston & Albany R. R.	17
Do Armory Hill Station	N. Y. & N. E. R. R.	29
Do Signal Station	U. S. Signal Office	11
Spring Hill	Cape Cod R. R.	1
State Line, Massachusetts and New York	Boston & Albany R. R.	91
Sterling Junction	Worcester & Nashua R. R.	43
Still River	Worcester & Nashua R. R.	24
Stone Hill, Williamstown	Appalachian Club	1,080
Stony Brook	Fitchburg R. R.	1
Sudbury	Mass. Cent. R. R.	13
Summit Station	Worcester & Nashua R. R.	61
Sunderland	Mass. Cent. R. R.	13
Sunset Rock	Appalachian Club	1,980
Sutton	Prov. & Worcester R. R.	33
Tatham	Boston & Albany R. R.	13
Templeton	Boston & Albany R. R.	96
Tewksbury	Lowell & Andover R. R.	13
Thatcher's Island, Signal Station	U. S. Signal Office	4
Thorndike	Boston & Albany R. R.	34
Tom, Mount	Conn. River R. R.	13
Turner's Falls	N. H. & Northampton R. R.	17
Uxbridge	Prov. & Worcester R. R.	22
Wachusett Mountain	Guyot	2,010
Walpole Junction, B., H. & E. R. R.	Framingham & Mansfield R. R.	11
Waltham	Fitchburg R. R.	4
Ware	Boston & Albany R. R.	48
Wareham	Cape Cod R. R.	1

Station.	Authority.	Elevation.
		<i>Feet.</i>
Warren	Boston & Albany R. R.	593
Washington	Boston & Albany R. R.	1,437
Waterford	Prov. & Worces. R. R.	188
Waterville	Boston & Albany R. R.	918
Waverly	Mass. Cent. R. R.	132
Wayland	Mass. Cent. R. R.	113
Wellesley	Boston & Albany R. R.	140
Wellfleet	Cape Cod R. R.	14
West Acton	Fitchburg R. R.	221
West Barnstable	Cape Cod R. R.	37
West Berlin	Mass. Cent. R. R.	295
Westborough	Boston & Albany R. R.	300
West Boylston	Worcester & Nashua R. R.	442
West Brimfield	Boston & Albany R. R.	391
West Brookfield	Boston & Albany R. R.	604
West Deerfield, junction with T. & G. R. R.	Mass. Cent. R. R.	267
Westfield	Boston & Albany R. R.	147
West Fitchburg	Fitchburg R. R.	539
Westford, Stony Brook R. R.	N., A. & B. R. R.	102
West Medford	Boston & Lowell R. R.	21
Westminster	Fitchburg R. R.	704
West Newton	Boston & Albany R. R.	55
Weston	Mass. Cent. R. R.	65
Do	Fitchburg R. R.	95
West Springfield	Boston & Albany R. R.	100
West Walpole	Boston & N. Y. R. R.	211
West Ware	Spring, Athol & Northern R. R.	387
West Warren	Boston & Albany R. R.	514
Whately	Conn. River R. R.	186
Whitins	Prov. & Worces. R. R.	263
Whituey's	Boston & Albany R. R.	166
Williamsburgh	N. H. & Northampton R. R.	492
Williams College, old observatory	Appalachian Club.	708
Williamstown	Troy & Greenfield R. R.	580
Williamsville	Boston & Albany R. R.	833
Williamsett	Conn. River R. R.	77
Wilmington	Boston & Lowell R. R.	97
Wilmington Junction	Boston & Maine R. R.	88
Winchendon	Boston & Albany R. R.	993
Winchester	Bost., Lowell & Nashua R. R.	27
Wood's Holl, Signal Station	Signal Office.	35
Worcester, Union Station	Boston & Albany R. R.	473
Do.....Lincoln Square Station	Boston & Albany R. R.	475
Do.....South Worcester Junction	Boston & Albany R. R.	477
Yarmouth	Cape Cod R. R.	40

MICHIGAN.

Station.	Authority.	Elevation.
		<i>Fet.</i>
Abronia.....	L. S. & M. S. R. R.....	714
Ada.....	D., G. H. & M. R. R.....	695
Adrian.....	L. S. & M. S. R. R.....	710
Alamo.....	K. & S. H. R. R.....	715
Alba.....	G. R. & Ind. R. R.....	1,177
Albion.....	Mich. Cent. R. R.....	943
Allegan.....	L. S. & M. S. R. R.....	718
Allen's.....	L. S. & M. S. R. R.....	1,064
Alpena, Signal Station.....	U. S. Signal Office.....	602
Amadore.....	P. H. & N. W. R. R.....	716
Anderson.....	P. H. & N. W. R. R.....	742
Ann Arbor.....	Mich. Cent. R. R.....	771
Argenta.....	L. S. & M. S. R. R.....	772
Arland.....	G. R. V. R. R.....	931
Ashton.....	G. R. & Ind. R. R.....	1,122
Attica.....	C. & G. T. R. R.....	808
Augusta.....	Mich. Cent. R. R.....	789
Austin Lake.....	G. R. & Ind. R. R.....	802
Avery's.....	Mich. Cent. R. R.....	655
Bagley.....	J., L. & S. R. R.....	1,285
Bald Tom, Geodetic Station.....	U. S. Lake Survey.....	822
Baldwin's.....	Ft. W., J. & S. R. R.....	1,011
Do...surface water in north branch Kalamazoo.....	Ft. W., J. & S. R. R.....	1,002
Balmer's.....	P. H. & N. W. R. R.....	744
Bancroft.....	C. & G. T. R. R.....	856
Bancroft.....	M., H. & O. R. R.....	936
Bankers.....	Ft. W., J. & S. R. R.....	1,067
Barron Lake.....	Mich. A. L. R. R.....	768
Batavia.....	L. S. & M. S. R. R.....	946
Battle Creek.....	Mich. Cent. R. R.....	819
Bay City.....	D. & B. C. R. R.....	592
Do...Junction.....	D. & B. C. R. R.....	604
Bay View.....	G. R. & Ind. R. R.....	616
Beaver Lake.....	J., L. & S. R. R.....	1,254
Bedford.....	Mich. Cent. R. R.....	809
Do...Geodetic Station.....	U. S. Lake Survey.....	679
Belmont.....	G. R. & Ind. R. R.....	661
Belsay.....	C. & G. T. R. R.....	777
Benedicts.....	A. & D. R. R.....	900
Berlamont.....	K. & S. H. R. R.....	700
Berlin.....	D., G. H. & M. R. R.....	687
Bertrand, Geodetic Station.....	U. S. Lake Survey.....	919
Big Rapids.....	G. R. & Ind. R. R.....	916
Do...G. R. & I. crossing.....	D., L. & N. R. R.....	1,001
Birmingham.....	D., G. H. & M. R. R.....	779
Blanchard.....	D., L. & N. R. R.....	930
Blissfield.....	L., S. & M. S. R. R.....	684
Do...Geodetic Station.....	U. S. Lake Survey.....	687
Bloomington.....	K. & S. H. R. R.....	731
Bond's Mill.....	G. R. & Ind. R. R.....	1,416
Boston Mine.....	M., H. & O. R. R.....	1,562
Bowen.....	G. R. V. R. R.....	734
Boyne Falls.....	G. R. & Ind. R. R.....	712
Bradley.....	G. R. & Ind. R. R.....	757
Brighton.....	D., L. & N. R. R.....	929
Bronson.....	L. S. & M. S. R. R.....	927
Do...Geodetic Station.....	U. S. Lake Survey.....	908

Station.	Authority.	Elevation.
		<i>Feet.</i>
Brownells	K. & S. H. R. R.	938
Bruce	M., H. & O. R. R.	1,258
Buchanan	Mich. Cent. R. R.	733
Bunday, Geodetic Station	U. S. Lake Survey	1,284
Burlington	Mich. A. L. R. R.	947
Burnt Bluff, Geodetic Station	U. S. Lake Survey	817
Burr Oak	L. S. & M. S. R. R.	896
Byers	G. R. & Ind. R. R.	902
Byron Centre	L. S. & M. S. R. R.	740
Cadillac	G. R. & Ind. R. R.	1,292
Caledonia	G. R. V. R. R.	799
Calumet	M. R. R. R.	1,228
Calvin, Geodetic Station	U. S. Lake Survey	1,011
Capac	C. & G. T. R. R.	817
Carlisle, Geodetic Station	U. S. Lake Survey	914
Carp	M., H. & O. R. R.	1,400
Carpenters	D. & B. C. R. R.	801
Carp River Furnace	M., H. & O. R. R.	625
Carsonville	C., D. & C. G. T. J. R. R.	768
Cassopolis	Mich. A. L. R. R.	881
Cedar Springs	G. R. & Ind. R. R.	846
Centerville	Mich. A. L. R. R.	813
Ceresco	Mich. Cent. R. R.	892
Chadwick	D., L. & N. R. R.	856
Champion	M., H. & O. R. R.	1,597
Do... Mine.	M., H. & O. R. R.	1,715
Charlesworth	L., S. & M. S. R. R.	916
Charlotte	G. R. V. R. R.	906
Chelsea	Mich. Cent. R. R.	913
Cheney	J., L. & S. R. R.	1,203
Chesaning	J., L. & S. R. R.	632
Chester	G. R. V. R. R.	833
Chicago Junction	D., L. & N. R. R.	874
Child's Mill	G. R. & Ind. R. R.	680
Chowlay	D., M. & M. R. R.	617
Clarendon	Mich. A. L. R. R.	966
Clarksburg	M., H. & O. R. R.	1,544
Clarkston	D., G. H. & M. R. R.	1,008
Clayton	L. S. & M. S. R. R.	905
Cleveland Mine	M., H. & O. R. R.	1,427
Cliff's Siding	M., H. & O. R. R.	1,661
Clinton	L. S. & M. S. R. R.	832
Clyde	J., L. & S. R. R.	767
Colbys	D., L. & N. R. R.	867
Coldwater	L., S. & M. S. R. R.	983
Collins	D., L. & N. R. R.	777
Colon	Mich. A. L. R. R.	838
Columbia	K. & S. H. R. R.	682
Columbia and Kloman Mine	M. H. & O. R. R.	1,510
Columbiaville	D. & B. C. R. R.	777
Colwell	D., L. & N. R. R.	914
Comstock	Mich. Cent. R. R.	782
Concord	Mich. A. L. R. R.	987
Condit	L. S. & M. S. R. R.	952
Conger	G. R. & Ind. R. R.	912
Constantine	L. S. & M. S. R. R.	803
Cooper	G. R. & Ind. R. R.	772
Do.....	L. S. & M. S. R. R.	749
Coopersville	D., G. H. & M. R. R.	646
Coral	D., L. & N. R. R.	897
Coreys	Mich. A. L. R. R.	871
Corunna	D., G. H. & M. R. R.	776
Crapo	C. & G. T. R. R.	777
Crofton	G. R. & Ind. R. R.	1,040

Station.	Authority.	Elevation.
		<i>Feet.</i>
Crosswell	P. H. & N. W. R. R.	730
Daileys	Mich. A. L. R. R.	871
Dalliba Mine	M. H. & O. R. R.	1,735
Dana	D., L. & N. R. R.	897
Danby	D., L. & N. R. R.	782
Davisburgh	D., G. H. & M. R. R.	959
Davison	C. & G. T. R. R.	791
Dayton	Mich. Cent. R. R.	718
Dearborn	Mich. Cent. R. R.	614
Decatur	Mich. Cent. R. R.	781
Deerfield	L. S. & M. S. R. R.	670
Delta	D., L. & N. R. R.	887
Dennison	D., G. H. & M. R. R.	640
Dentons	Mich. Cent. R. R.	703
Detroit	Mich. Cent. R. R.	581
Do Signal Station	U. S. Signal Office	661
Devereux	L. S. & M. S. R. R.	990
Dexter	Mich. Cent. R. R.	858
Dickson	D., L. & N. R. R.	897
Dimondale Crossing	L. S. & M. S. R. R.	860
Divide, Geodetic Station	U. S. Lake Survey	1,029
Dorr	L. S. & M. S. R. R.	696
Dowagiac	Mich. Cent. R. R.	769
Drayton Plains	D., G. H. & M. R. R.	967
Dundee, Geodetic Station	U. S. Lake Survey	681
Durand	D., G. H. & M. R. R.	801
Do.. Crossing D. G. H. & M. R. R. (grade)	C. & G. T. R. R.	797
Durton	D., M. & M. R. R.	752
Eagle	D., L. & N. R. R.	851
Eagle Mill	M., H. & O. R. R.	1,280
Eagle Mills	L. S. & M. S. R. R.	601
East Saginaw	J., L. & S. R. R.	588
Eaton Rapids	G. R. V. R. R.	876
Do.. G. R. V. R. R. crossing	L., S. & M. S. R. R.	864
Edgeton	G. R. & Ind. R. R.	755
Edmore	D., L. & N. R. R.	946
Edwards Mine	M., H. & O. R. R.	1,544
Elba	C. & G. T. R. R.	859
Elmira	G. R. & Ind. R. R.	1,234
Elmwood	D. L. & N. R. R.	638
Emmet	C. & G. T. R. R.	779
Empire Mine	M., H. & O. R. R.	1,571
Escanaba, Signal Station	U. S. Signal Office	612
Excelsior Furnace	M. H. & O. R. R.	1,447
Fairfield, Geodetic Station	U. S. Lake Survey	799
Fenton	D., G. H. & M. R. R.	909
Fenwick	D., L. & N. R. R.	848
Ferrysburgh	D., G. H. & M. R. R.	596
Fishdam River, Geodetic Station	U. S. Lake Survey	856
Fisher	G. R. & Ind. R. R.	682
Fishers	D., L. & N. R. R.	631
Fleming	D., L. & N. R. R.	934
Flint	C. & G. T. R. R.	715
Flowerfield	L. S. & M. S. R. R.	864
Forrest	J., L. & S. R. R.	1,226
Fowler	D., G. H. & M. R. R.	748
Fowlerville	D., L. & N. R. R.	902
Francisco	Mich. Cent. R. R.	1,016
Frazer	C., D. & C. G. T. J. R. R.	604
Fyfe Lake	G. R. & Ind. R. R.	1,019
Gaines	D., G. H. & M. R. R.	859
Galesburgh	Mich. Cent. R. R.	788
Galion	Mich. Cent. R. R.	622

Station.	Authority.	Elevation.
		<i>Feet.</i>
Gaylord.....	J., L. & S. R. R.....	1,349
Geddes.....	Mich. Cent. R. R.....	743
Geneva.....	K. & S. H. R. R.....	695
Genon.....	D., L. & N. R. R.....	978
Gillett's Lake.....	.....	932
Glenwood.....	Mich. Cent. R. R.....	751
Gobles.....	K. & S. H. R. R.....	803
Goodisons.....	D. & B. C. R. R.....	842
Gowen.....	D., L. & N. R. R.....	848
Grace Furnace.....	M., H. & O. R. R.....	632
Graffville.....	D., L. & N. R. R.....	969
Grand Haven.....	D., G. H. & M. R. R.....	594
Do.....Signal Station.....	U. S. Signal Office.....	620
Grand Island Geodetic Station.....	U. S. Lake Survey.....	990
Grand Junction.....	C. & M. L. S. R. R.....	678
Grand Ledge.....	D., L. & N. R. R.....	860
Grand Rapids.....	L., S. & M. S. R. R.....	605
Do.....	D., G. H. & M. R. R.....	639
Grand Trunk Junction.....	L., S. & M. S. R. R.....	586
Grandville.....	L., S. & M. S. R. R.....	628
Grant Center.....	P. H. & N. W. R. R.....	745
Grass Lake.....	Mich. Cent. R. R.....	986
Gratiot Center.....	P. H. & N. W. R. R.....	612
Grayling.....	J., L. & S. R. R.....	1,135
Greenfield.....	D., L. & N. R. R.....	636
Green Oak.....	D., L. & N. R. R.....	893
Greenville.....	D., L. & N. R. R.....	819
Greenwood.....	J., L. & S. R. R.....	824
Hammoud.....	G. R. V. R. R.....	754
Hancock.....	M. R. R. R.....	607
Hanover.....	Ft. W., J. & S. R. R.....	1,114
Haring.....	G. R. & Ind. R. R.....	1,322
Hastings.....	G. R. V. R. R.....	791
Hilliard.....	L., S. & M. S. R. R.....	719
Hillsdale.....	L., S. & M. S. R. R.....	1,095
Do.....Geodetic Station.....	U. S. Lake Survey.....	1,239
Hobert.....	G. R. & Ind. R. R.....	1,307
Holly.....	D., G. H. & M. R. R.....	938
Homer Air Line Crossing.....	L., S. & M. S. R. R.....	972
Hopkins.....	L., S. & M. S. R. R.....	703
Horse Shoe Lake, low water.....	Ft. W., J. & S. R. R.....	1,054
Houghton, Mount.....	Foster & Whitney.....	1,511
Howard City.....	G. R. & Ind. R. R.....	872
Hudson.....	L., S. & M. S. R. R.....	945
Humboldt.....	M., H. & O. R. R.....	1,535
Humboldt Mine.....	M., H. & O. R. R.....	1,557
Hunter's Creek.....	D. & B. C. R. R.....	917
Huron Mountain, Geodetic Station.....	U. S. Lake Survey.....	1,532
Huron, Lake.....	U. S. Lake Survey.....	582
Ida.....	L., S. & M. S. R. R.....	632
Imlay City.....	C. & G. T. R. R.....	830
Inaple Hill.....	G. R. & Ind. R. R.....	887
Ingersoll.....	D., L. & N. R. R.....	861
Ionia.....	D., L. & N. R. R.....	659
Irving.....	G. R. V. R. R.....	745
Ishpeming.....	M., H. & O. R. R.....	1,443
Ise Royal, Geodetic Station.....	U. S. Lake Survey.....	1,062
Ives' Hill, Geodetic Station.....	U. S. Lake Survey.....	1,632
Jackson.....	L., S. & M. S. R. R.....	928
Do.....	Mich. Cent. R. R.....	927
Jackson, Mich. C. R. R., crossing on Grand River.....	Ft. W., J. & S. R. R.....	931
Jackson Junction.....	Mich. Cent. R. R.....	942
Jackson Mine.....	M., H. & O. R. R.....	1,425

Station.	Authority.	Elevation.
		<i>Feet.</i>
Jeddo.....	P., H. & N. W. R. R.....	737
Jones.....	Mich. A. L. R. R.....	916
Jonesville.....	L., S. & M. S. R. R.....	1,097
Do.....	Ft. W., J. & S. R. R.....	1,056
Do..... crossing of L. S. & M. S. R. R., old line.....	Ft. W., J. & S. R. R.....	1,077
Kalamazoo.....	L. S. & M. S. R. R.....	777
Kalkaska.....	G. R. & Ind. R. R.....	1,022
Kawkawlin.....	J., L. & S. R. R.....	537
Kendall.....	K. & S. H. R. R.....	792
Keystone Mine.....	M., H. & O. R. R.....	1,067
Kiddville.....	D., L. & N. R. R.....	892
Kingsley.....	P. H. & N. W. R. R.....	736
Klinger Lake.....	L. S. & M. S. R. R.....	890
Lake Superior Mine.....	M., H. & O. R. R.....	1,447
Laingsburg.....	J., L. & S. R. R.....	806
L'Anse.....	M., H. & O. R. R.....	608
Lansing.....	J., L. & S. R. R.....	852
Do.....	L. S. & M. S. R. R.....	827
Do.....	C. & G. T. R. R.....	840
Lapeer.....	C. & G. T. R. R.....	830
Lawton.....	Mich. Cent. R. R.....	778
Leelsville.....	G. R. & Ind. R. R.....	1,050
Lenawee Junction.....	L. S. & M. S. R. R.....	714
Leoni.....	Mich. Cent. R. R.....	980
Leroy.....	G. R. & Ind. R. R.....	1,232
Linden.....	D., G. H. & M. R. R.....	874
Litchfield.....	L. S. & M. S. R. R.....	1,007
Livonia.....	D., L. & N. R. R.....	669
Lockwood.....	G. R. & Ind. R. R.....	882
Lowell.....	D., G. H. & M. R. R.....	641
Lowthian Mine.....	M., H. & O. R. R.....	1,497
Lyons.....	D., L. & N. R. R.....	734
McBride's.....	D., L. & N. R. R.....	942
McKay's Mountain.....	Foster & Whitney.....	1,627
McKinnie's.....	D., L. & N. R. R.....	647
McOmber Mine.....	M., H. & O. R. R.....	1,458
Macon.....	A. & D. R. R.....	870
Magnetic Mine.....	M., H. & O. R. R.....	1,563
Mancelona.....	G. R. & Ind. R. R.....	1,119
Manchester.....	L. S. & M. S. R. R.....	907
Manganese Mine.....	M., H. & O. R. R.....	1,503
Mangers.....	D. & B. C. R. R.....	597
Manton.....	G. R. & Ind. R. R.....	1,142
Maple Valley.....	D., L. & N. R. R.....	925
Marengo.....	Mich. Cent. R. R.....	921
Marquette.....	M., H. & O. R. R.....	649
Do.....	D., M. & M. R. R.....	622
Do..... Signal Station.....	U. S. Signal Office.....	673
Marshall.....	Mich. Cent. R. R.....	898
Marshfield.....	D., L. & N. R. R.....	1,011
Martin.....	G. R. & Ind. R. R.....	827
Mason.....	J., L. & S. R. R.....	883
Mattawan.....	Mich. Cent. R. R.....	860
Mecosta.....	D., L. & N. R. R.....	962
Melrose.....	G. R. & Ind. R. R.....	677
Mendon.....	G. R. & Ind. R. R.....	842
Meridian.....	C. & G. T. R. R.....	850
Do.....	D., L. & N. R. R.....	885
Mesnard, Geodetic Station.....	U. S. Lake Survey.....	1,124
Metamora.....	D. & B. C. R. R.....	1,055
Michigamme.....	M., H. & O. R. R.....	1,584
Michigamme Mine.....	M., H. & O. R. R.....	1,552
Michigan Furnace.....	M., H. & O. R. R.....	1,537

Station.	Authority.	Elevation.
		<i>Feet.</i>
Michigan, Lake	U. S. Lake Survey	532
Middleville	G. R. V. R. R.	717
Millbrook	D., L. & N. R. R.	938
Mill Creek	G. R. & Ind. R. R.	625
Millington	D. & B. C. R. R.	757
Milton, Geodetic Station	U. S. Lake Survey	893
Milwaukee Junction	Grand Trunk R. R.	625
Milwaukee Mine	M., H. & O. R. R.	1,562
Moline	G. R. & Ind. R. R.	785
Monistique, Geodetic Station	U. S. Lake Survey	997
Monroe, Geodetic Station	U. S. Lake Survey	626
Monroe Junction	L. S. & M. S. R. R.	579
Montague, water-tank	C. & M. L. S. R. R.	587
Monteith	G. R. & Ind. R. R.	828
Montgomery	Ft. W., J. & S. R. R.	1,035
Moore Park	L., S. & M. S. R. R.	842
Morley	G., R. & Ind. R. R.	887
Morrice	C. & G. T. R. R.	890
Moshville	Ft. W., J. & S. R. R.	1,015
Mount Clemens	C. D. & C. G. T. J. R. R.	602
Mud Lake, Geodetic Station	U. S. Lake Survey	1,005
Muir	D., G. H. & M. R. R.	657
Muskegon, water-tank	C. & M. L. S. R. R.	594
Napoleon	L. S. & M. S. R. R.	964
Nashville	G. R. V. R. R.	807
Negaunee	M., H. & O. R. R.	1,379
New Buffalo	Mich. Cent. R. R.	602
New Haven	C., D. & C. G. T. J. R. R.	617
Newport	L. S. & M. S. R. R.	584
Niles	Mich. Cent. R. R.	681
Do Junction	Mich. A. L. R. R.	697
Norris	D. & B. C. R. R.	631
Northampton Mine	M., H. & O. R. R.	1,675
North Concord	Mich. Cent. R. R.	968
North Lansing	D., L. & N. R. R.	852
Nottawa	G. R. & Ind. R. R.	852
Nowell	L. S. & M. S. R. R.	942
Nudica	C. & M. L. S. R. R.	631
Oakeet	C. & G. T. R. R.	874
Odlams	P. H. & N. W. R. R.	730
Ogemaw	J., L. & S. R. R.	1,038
Okemos	D., L. & N. R. R.	874
Onondaga	G. R. V. R. R.	895
Ontonagon Junction	M., H. & O. R. R.	1,434
Orion	D. & B. C. R. R.	995
Orono	G., R. & Ind. R. R.	1,072
Osseo	L. S. & M. S. R. R.	1,126
Ostemo	Mich. Cent. R. R.	962
Otsego	L. S. & M. S. R. R.	710
Ottawa Lake	L. S. & M. S. R. R.	633
Otterburn	C. & G. T. R. R.	774
Otter Lake	D. & B. C. R. R.	860
Ovid	D., G. H. & M. R. R.	735
Owosso	D., G. H. & M. R. R.	745
Oxford	D. & B. C. R. R.	1,058
Pacific Furnace	M., H. & O. R. R.	622
Palmer	D., L. & N. R. R.	868
Palmyra	L. S. & M. S. R. R.	707
Paris	G. R. & Ind. R. R.	927
Parma	Mich. Cent. R. R.	986
Parmalee	G. R. V. R. R.	713
Pentwater, turn-table	C. & M. L. S. R. R.	595
Perrin	G. R. & Ind. R. R.	872
Perry	C. & G. T. R. R.	892

Station.	Authority.	Elevation.
		<i>Feet.</i>
Petersburgh	L. S. & M. S. R. R.	670
Petoskey	G. R. & Ind. R. R.	658
Pewamo	D., G., H. & M. R. R.	744
Pierson	G. R. & Ind. R. R.	906
Pinconning	J., L. & S. R. R.	599
Pine Grove	K. & S. H. R. R.	777
Pine Lake	C. & G. T. R. R.	859
Pioneer Furnace	M., H. & O. R. R.	1,382
Pittsburgh Lake, Angeline Mine	M., H. & O. R. R.	1,442
Pittsford	L. S. & M. S. R. R.	1,109
Do. Geodetic Station	U. S. Lake Survey	1,149
Plainwell	L. S. & M. S. R. R.	744
Plymouth	D., L. & N. R. R.	747
Pokagon	Mich. Cent. R. R.	733
Pontiac	D., G., H. & M. R. R.	934
Do. Stanley Station crossing, O. & Pt. A. R. R.	C. & G. T. R. R.	897
Porcupine Mountain, Geodetic Station	U. S. Lake Survey	2,023
Portage	L. S. & M. S. R. R.	860
Portage Lake	G. R. & Ind. R. R.	834
Porter, Geodetic Station	U. S. Lake Survey	950
Port Huron, Signal Station	U. S. Signal Office	633
Portland	D., L. & N. R. R.	730
Pulaski	Mich. A. L. R. R.	1,043
Quimby	G. R. V. R. R.	794
Quincy	L. S. & M. S. R. R.	1,027
Do. Geodetic Station	U. S. Lake Survey	1,061
Rack's Mills	C. D. & C. G. T. R. R.	759
Raisin	A. & D. R. R.	802
Do. Geodetic Station	U. S. Lake Survey	851
Reading	Ft. W., J. & S. R. R.	1,200
Do. Geodetic Station	U. S. Lake Survey	1,209
Redford	D. L. & N. R. R.	631
Reed City	G. R. & Ind. R. R.	1,027
Reese	D. & B. C. R. R.	629
Remick	D. L. & N. R. R.	934
Republic	M. H. & O. R. R.	1,510
Republic Mine	M. H. & O. R. R.	1,536
Riga	L. S. & M. S. R. R.	692
Rives' Junction	G. R. V. R. R.	904
Rochester	D. & B. C. R. R.	747
Rockford	G. R. & Ind. R. R.	689
Rockwood	L. S. & M. S. R. R.	582
Rodney	D. L. & N. R. R.	1,062
Rolling Mill Mine	M. H. & O. R. R.	1,402
Roscommon	J., L. & S. R. R.	1,128
Ross	G. R. & Ind. R. R.	777
Royal Oak	D., G. H. & M. R. R.	663
Saganin	J., L. & S. R. R.	616
Saginaw	M., H. & O. R. R.	1,441
Saginaw City	J., L. & S. R. R.	591
Saginaw Mine	M., H. & O. R. R.	1,552
Saint Charles	J., L. & S. R. R.	591
Saint Helens	J., L. & S. R. R.	1,158
Saint John's	D., G. H. & M. R. R.	767
Do. (L. W. of Maumee River)	Ft. W., J. & S. R. R.	996
Do. Bridge	C. & M. L. S. R. R.	596
Salem	D. L. & N. R. R.	953
Saline	A. & D. R. R.	889
Sanborn, grade	C. & G. T. R. R.	710
Sand Lake	G. R. & Ind. R. R.	912
Sand River	D. M. & M. R. R.	627
Saranac	D., G. H. & M. R. R.	643
Schoolcraft	L. S. & M. S. R. R.	884

Station.	Authority.	Elevation.
		<i>Feet.</i>
urg.....	Mich. Cent. R. R.....	845
Depot.....	C. & G. T. R. R.....	879
ville.....	C. & M. L. S. R. R.....	908
Bay, Geodetic Station.....	G. R. & Ind. R. R.....	832
go Mine.....	U. S. Lake Survey.....	1,054
isville.....	M. H. & O. R. R.....	1,421
n.....	D., G. H. & M. R. R.....	749
n, Geodetic Station.....	D., L. & N. R. R.....	856
od.....	G. R. V. R. R.....	906
	U. S. Lake Survey.....	1,038
	Mich. A. L. R. R.....	872
	D., L. & N. R. R.....	848
	G. R. & Ind. R. R.....	1,219
	Mich. A. L. R. R.....	971
boardman.....	G. R. & Ind. R. R.....	1,005
laven.....	K. & S. H. R. R.....	583
ansing.....	L. S. & M. S. R. R.....	907
yon.....	D., L. N. R. R.....	933
gs.....	D. & B. C. R. R.....	621
Arbor.....	Mich. A. L. R. R.....	994
Lake.....	D., G. H. & M. R. R.....	596
ort.....	L. S. & M. S. R. R.....	986
fine.....	M. H. & O. R. R.....	1,607
fountain.....	M. H. & O. R. R.....	1,602
rd Mine.....	M. H. & O. R. R.....	1,538
h.....	J., L. & S. R. R.....	627
.....	D., L. & N. R. R.....	904
..... Junction.....	D., L. & N. R. R.....	821
od.....	G. R. & Ind. R. R.....	954
oad.....	J., L. & S. R. R.....	602
on's.....	A. & D. R. R.....	865
z.....	M. H. & O. R. R.....	1,567
d Mine.....	M. H. & O. R. R.....	1,602
on.....	M. H. & O. R. R.....	1,643
on River, Geodetic Station.....	U. S. Lake Survey.....	947
	L. S. & M. S. R. R.....	934
.....	C. & G. T. R. R.....	783
..... Lake.....	U. S. Lake Survey.....	602
Creek.....	C. & G. T. R. R.....	782
	M., H. & O. R. R.....	1,225
Mine.....	M., H. & O. R. R.....	1,516
seh.....	L. S. & M. S. R. R.....	907
ha.....	Mich. A. L. R. R.....	937
	J., L. & S. R. R.....	589
s.....	D. & B. C. R. R.....	1,093
Lakes.....	M., H. & O. R. R.....	1,616
Oaks.....	Mich. Cent. R. R.....	669
Rivers.....	L. S. & M. S. R. R.....	905
	G. R. & Ind. R. R.....	742
n.....	L. S. & M. S. R. R.....	584
....., Geodetic Station.....	U. S. Lake Survey.....	1,237
ridge.....	C. & G. T. R. R.....	851
t's.....	D., L. & N. R. R.....	834
	G. R. & Ind. R. R.....	1,212
City.....	Mich. A. L. R. R.....	900
Big Rapids.....	G. R. & Ind. R. R.....	927
	D. & B. C. R. R.....	650
ia.....	Mich. A. L. R. R.....	873
	D. & B. C. R. R.....	643
atville.....	G. R. V. R. R.....	817
	D., G. H. & M. R. R.....	770
urg.....	G. R. & Ind. R. R.....	852
....., Geodetic Station.....	U. S. Lake Survey.....	1,328
s.....	D., L. & N. R. R.....	858

Station.	Authority.	Elevation.
		<i>Feet.</i>
Walton Junction	G. R. & Ind. R. R.	1,047
Warren	D. & B. C. R. R.	641
Wasepi	G. R. & Ind. R. R.	842
Do. (near G. R. & I. R. R. Crossing)	Mich. A. L. R. R.	835
Waterford	D., G. H. & M. R. R.	988
Wayland	G. R. & Ind. R. R.	747
Wayne Junction	Mich. Cent. R. R.	662
Webberville	D., L. & N. R. R.	892
Wells	J., L. & S. R. R.	774
Wellesville	L. S. & M. S. R. R.	690
Wenona	J., L. & S. R. R.	589
West Branch	J., L. & S. R. R.	357
Westwood	G. R. & Ind. R. R.	1,089
Wheal Kate, Geodetic Station	U. S. Lake Survey	1,508
Wheatland, Geodetic Station	U. S. Lake Survey	1,248
Wheatland Centre	D., L. & N. R. R.	1,004
White Feather	J., L. & S. R. R.	604
White Oaks	Mich. Cent. R. R.	842
White Pigeon	L. S. & M. S. R. R.	824
Whites	Mich. Cent. R. R.	900
Wibber Summit	D., L. & N. R. R.	781
Williamston	D., L. & N. R. R.	891
Winthrop Mine	M., H. & O. R. R.	1,456
Wood Lake	G. R. & Ind. R. R.	891
Wood's Corners	D., L. & N. R. R.	851
Wood's Mill	D., L. & N. R. R.	926
Woodstock, Geodetic Station	U. S. Lake Survey	1,191
Wyandotte	L. S. & M. S. R. R.	580
Wyman	D., L. & N. R. R.	960
Ypsilanti	Mich. Cent. R. R.	714

MINNESOTA.

Station.	Authority.	Elevation.
		<i>Feet.</i>
	St. P. & S. C. R. R.	1,538
	Toner	950
	N. P. R. R.	1,204
	C., M. & St. P. R. R.	1,629
water	U. S. Engineer Corps	1,190
	St. P. & P. R. R.	1,187
lea	C., M. & St. P. R. R.	1,221
	C., M. & St. P. R. R.	1,261
	U. P. R. R.	1,328
lria	St. P. & P. R. R.	1,382
ater	U. S. Engineer Corps	657
	C. & N. W. R. R.	1,283
water	U. S. Engineer Corps	827
	St. P. & P. R. R.	878
n	C., M. & St. P. R. R.	1,007
ng	C., M. & St. P. R. R.	1,270
ok	St. P. & S. C. R. R.	1,396
	C., M. & St. P. R. R.	861
n	N. P. R. R.	1,310
	C., M. & St. P. R. R.	1,253
	C., M. & St. P. R. R.	1,197
Junction	C., M. & St. P. R. R.	1,194
	St. P. & P. R. R.	918
	St. P. & S. C. R. R.	1,533
	St. P. & P. R. R.	1,116
	C. & N. W. R. R.	1,528
ke	C. & N. W. R. R.	930
	Toner	1,600
Bay	Smithsonian Inst	1,270
	St. P. & P. R. R.	972
ain, water	U. S. Engineer Corps	695
ain	St. P. & S. C. R. R.	725
airie	St. P. & P. R. R.	1,134
e	St. P. & P. R. R.	1,084
ie	St. P. & P. R. R.	903
	St. P. & P. R. R.	1,042
	St. P. & S. C. R. R.	1,631
ie	St. P. & P. R. R.	930
ie Lake	U. S. Engineer Corps	978
	M. & St. P. R. R.	963
	Nicollet	966
n Lake	St. P. & S. C. R. R.	1,420
and	C., M. & St. P. R. R.	1,089
y	St. P. & S. C. R. R.	728
g Prairie	C., M. & St. P. R. R.	1,286
gton	St. P. & S. C. R. R.	738
ling	St. P. & S. C. R. R.	1,425
nces	Toner	1,238
l, water	U. S. Engineer Corps	1,152
d	N. P. R. R.	1,207
ridge	St. P. & P. R. R.	957
, Signal Station	U. S. Signal Office	968
ood	St. P. & S. C. R. R.	749
dale	C., M. & St. P. R. R.	1,271
on	C., M. & St. P. R. R.	1,024
an	Toner	600
ton, Geodetic Station	U. S. Lake Survey	744
	C., M. & St. P. R. R.	947

Station.	Authority.	Elevation.
		<i>Feet.</i>
Butterfield.....	St., P. & S. C. R. R.....	1,184
Byron.....	C. & N. W. R. R.....	1,250
Campbell.....	St. P. & P. R. R.....	977
Canby.....	C. & N. W. R. R.....	1,243
Carver.....	C., M. & St. P. R. R.....	815
Do.....	M. & St. L. R. R.....	719
Cass Lake, water.....	U. S. Engineer Corps.....	1,300
Castle Rock.....	C. M. & St. P. R. R.....	935
Centreville.....	L., S. & M. R. R. R.....	922
Chaska.....	C., M. & St. P. R. R.....	725
Do crossing of M. & St. L. R. R.....	C., M. & St. P. R. R.....	730
Chatfield.....	C. & N. W. R. R.....	976
Chatfield Junction.....	C. & N. W. R. R.....	1,275
Chester.....	C. & N. W. R. R.....	1,122
Christina.....	St. P. & P. R. R.....	1,219
Claremont.....	C. & N. W. R. R.....	1,280
Clear Lake.....	St. P. & P. R. R.....	993
Clear Water, water.....	U. S. Engineer Corps.....	936
Clinton Falls.....	C., M. & St. P. R. R.....	1,107
Cockato.....	St. P. & P. R. R.....	1,022
Courtland.....	C. & N. W. R. R.....	936
Do .. bridge.....	C. & N. W. R. R.....	811
Do .. high water.....	C. & N. W. R. R.....	797
Crookston.....		881
Crow Wing.....	St. P. & P. R. R.....	1,190
Do .. water.....	U. S. Engineer Corps.....	1,146
Crystal Lake.....	St. P. & S. C. R. R.....	994
Dahlgren.....	C., M. & St. P. R. R.....	982
Darwin.....	St. P. & P. R. R.....	1,127
Davis, Camp.....	Pacific R. R. Reports.....	994
Dayton Bluff.....	C., M. & St. P. R. R.....	710
De Forest.....	C., M. & St. P. R. R.....	1,446
De Graff.....	St. P. & P. R. R.....	1,056
Delano.....	St. P. & P. R. R.....	923
Delevan.....	C., M. & St. P. R. R.....	1,057
Detroit City.....	N. P. R. R.....	1,364
Dexter.....	C., M. & St. P. R. R.....	1,412
Dodge Centre.....	C. & N. W. R. R.....	1,288
Doran.....	St. P. & P. R. R.....	968
Doty.....	C. & N. W. R. R.....	1,310
Douglas.....	St., & P. R. R.....	1,121
Dover.....	C. & N. W. R. R.....	1,135
Drake.....	St. P. & S. C. R. R.....	1,516
Dresbach.....	C. M. & St. P. R. R.....	676
Duluth.....	N. P. R. R.....	607
Do .. Lake Superior.....	N. P. R. R.....	602
Do .. Signal Station.....	U. S. Signal Office.....	644
Dundas.....	C., M. & St. P. R. R.....	955
Dundee.....	St. P. & S. C. R. R.....	1,443
Eagle Creek bridge.....	St. P. & S. C. R. R.....	708
Eagle Lake.....	C. & N. W. R. R.....	1,012
East Henderson, water.....	U. S. Engineer Corps.....	710
East Henderson.....	St. P. & S. C. R. R.....	734
East Minneapolis.....	M. & St. L. R. R.....	830
East Okabena Lake, water.....	St. P. & S. C. R. R.....	1,569
Easton.....	C., M. & St. P. R. R.....	1,046
East Richmond.....	C., M. & St. P. R. R.....	658
East Saint Cloud.....	St. P. & P. R. R.....	1,011
East Saint Peter.....	St. P. & S. C. R. R.....	748
East Sawteeth, Geodetic Station.....	U. S. Lake Survey.....	1,505
Eckelson, Lake.....	R. R. Reports.....	1,454
Eden Prairie.....	M. & St. L. R. R.....	882
Edgerton.....	C., M. & St. P. R. R.....	1,550
Elgin.....	C. & N. W. R. R.....	1,069

Station.	Authority.	Elevation.
		<i>Feet.</i>
Elk Lake	P. R. R. Reports	1,298
Elk River	St. P. & P. R. R.	903
Elk River, water	U. S. Engineer Corps	850
Ellea	Toner	1,600
Empire	C., M. & St. P. R. R.	889
Evansville	St. P. & P. R. R.	1,345
Eyota	C. & N. W. R. R.	1,237
Fairfield	C., M. & St. P. R. R.	943
Fairmount	C., M. & St. P. R. R.	1,176
Faribault	C., M. & St. P. R. R.	1,002
Farmington, crossing H. & D. R. R.	C., M. & St. P. R. R.	901
Do..... Depot	C., M. & St. P. R. R.	904
Do..... crossing Iowa and Minnesota division	C., M. & St. P. R. R.	904
Faxon, water	U. S. Engineer Corps	699
Flandreau, Big Sioux River	St. P. & S. C. R. R.	1,501
Fond du Lac	N. P. R. R.	608
Forest Lake	L. S. & M. R. R. R.	906
Forest Mills	C. & N. W. R. R.	1,023
Do.....	Minn. Mid. R. R.	970
Fountain	C., M. & St. P. R. R.	1,302
Frazee City	N. P. R. R.	1,411
Frontenac	C., M. & St. P. R. R.	721
Fulda	C., M. & St. P. R. R.	1,508
Fulton	St. P. & P. R. R.	709
Furk	Minn. Mid. R. R.	821
Glasgow	Minn. Mid. R. R.	717
Glencoe	C., M. & St. P. R. R.	1,007
Glenville	B. C. R. & R. R. R.	1,223
Glyndon	N. P. R. R.	925
Good Thunder	C., M. & St. P. R. R.	974
Goose Lake	L., S. & M. R. R. R.	888
Gordon	St. P. & P. R. R.	1,017
Grand Meadow	C., M. & St. P. R. R.	1,338
Grandview	C. & N. W. R. R.	1,173
Granite Falls	C., M. & St. P. R. R.	941
Hamilton	St. P. & S. C. R. R.	714
Hammond	Minn. Mid. R. R.	805
Hancock	St. P. & P. R. R.	1,150
Hartland	M. & St. L. R. R.	1,240
Hastings	C., M. & St. P. R. R.	709
Do... L. W.	U. S. Engineer Corps	664
Do... Junction	C., M. & St. P. R. R.	709
Hatfield	C., M. & St. P. R. R.	1,662
Havana	C., M. & St. P. R. R.	1,222
Hawley	N. P. R. R.	1,152
Hayward	C., M. & St. P. R. R.	1,248
Hector	C., M. & St. P. R. R.	1,081
Helena	M. & St. L. R. R.	886
Henderson, water	U. S. Engineer Corps	709
Henry Lake	P. R. R. Reports	1,284
Herman	St. P. & P. R. R.	1,063
Heron Lake, depot	St. P. & S. C. R. R.	1,417
Do..... water	St. P. & S. C. R. R.	1,403
Hersey (Brewster)	St. P. & S. C. R. R.	1,485
Hinckley	L., S. & M. R. R. R.	1,025
Hobart	N. P. R. R.	1,386
Hokah	C., M. & St. P. R. R.	649
Homer	C., M. & St. P. R. R.	663
Hopkins	M. & St. L. R. R.	919
Hospers	Toner	1,438
Houston	C., M. & St. P. R. R.	679
Houtland	M. & St. L. R. R.	1,247
Hutchison	Toner	1,050

Station.	Authority.	Elevation.
		<i>Feet.</i>
Iceland	St. P. & S. C. R. R.	908
Ida	St. P. & P. R. R.	1,402
Iona	C., M. & St. P. R. R.	1,008
Iosco	M. & St. L. R. R.	1,146
Isinours	C., M. & St. P. R. R.	899
Island Lake	N. P. R. R.	1,307
Itasca	St. P. & P. R. R.	895
Janesville	C. & N. W. R. R.	1,063
Janett	Minn. Mid. R. R.	792
Jessie Lake	P. R. R. Reports	1,360
Jordan	M. & St. L. R. R.	753
Judson, water	U. S. Engineer Corps	769
Junction	St. P. & S. C. R. R.	1,633
Kalikomeja Lake		1,092
Kandiyohi	St. P. & P. R. R.	1,216
Kasota	C. & N. W. R. R.	794
Do Junction	St. P. & S. C. R. R.	800
Do Minnesota River Bridge	C. & N. W. R. R.	781
Do Minnesota River, low water	C. & N. W. R. R.	723
Do Minnesota River, high water	C. & N. W. R. R.	735
Kasson	C. & N. W. R. R.	1,232
Keegan	Minn. Mid. R. R.	759
Keegan's Lake, grade	C., M. & St. P. R. R.	948
Kellogg	C., M. & St. P. R. R.	702
Kettle River depot	L. S. & M. R. R. R.	1,114
Kilkenny	M. & St. L. R. R.	1,056
Kimberley	N. P. R. R.	1,233
Kirkhoven	St. P. & P. R. R.	1,104
Kittson	St. P. & P. R. R.	886
Lac qui Parle	U. S. Engineer Corps	940
La Crescent	C., M. & St. P. R. R.	647
Do .. high-water mark	C., M. & St. P. R. R.	648
Do .. lime-kiln	C., M. & St. P. R. R.	650
Lake Benton	C. & N. W. R. R.	1,759
Lake City	C., M. & St. P. R. R.	705
Do .. water	U. S. Engineer Corps	658
Lake Crystal	St. P. & S. C. R. R.	987
Lakefield	C., M. & St. P. R. R.	1,463
Lake Side	N. P. R. R.	1,335
Lake Traverse, water	M. & St. P. R. R.	970
Lamberton	C. & N. W. R. R.	1,144
La Moille	C., M. & St. P. R. R.	660
Lanesboro	C., M. & St. P. R. R.	841
Langdon	C., M. & St. P. R. R.	813
Langola	St. P. & P. R. R.	1,063
Lansing	St. P. & P. R. R.	1,224
Lapham	Smithsonian	850
Leech Lake	U. S. Engineer Corps	1,292
Lena	C. & N. W. R. R.	1,073
Lester Riv. Geodetic Station	U. S. Lake Survey	1,157
Le Sueur	St. P. & S. C. R. R.	753
Do .. water	U. S. Engineer Corps	715
Do .. high water in Minnesota River	St. P. & S. C. R. R.	735
Lewiston	C. & N. W. R. R.	1,211
Lincoln	St. P. & S. C. R. R.	1,042
Litchfield	St. P. & P. R. R.	1,125
Little Falls	St. P. & P. R. R.	1,118
Long Lake Station	St. P. & P. R. R.	949
Lower Bass Lake	St. P., S. & T. F. R. R.	893
Luzerne	St. P. & S. C. R. R.	1,451
Lyle	C., M. & St. P. R. R.	1,199
McCracken	Minn. Mid. R. R.	732
Madison	C. M. & St. P. R. R.	1,250
Manchester	M. & St. L. R. R.	1,258

Station.	Authority.	Elevation.
		<i>Feet.</i>
to	C., M. & St. P. R. R	770
o .. water	U. S. Engineer Corps	751
nin	St. P. & P. R. R.	842
ton	C., M. & St. P. R. R.	1,031
n	Toner	1,200
all	C. & N. W. R. R.	1,174
pa	Minn. Mid. R. R.	935
ia	St. P. & S. C. R. R.	1,021
rd	C., M. & P. R. R.	1,098
se	St. P. & P. R. R.	1,189
sta	St. P. & S. C. R. R.	718
o .. St. Paul Junction	C., M. & St. P. R. R.	759
en	C. & N. W. R. R.	1,149
um Junction, St. P. & S. C. R. R.	M. & St. L. R. R.	753
ad Junction	Minn. Mid. R. R.	695
.....	C., M. & St. P. R. R.	995
lle	Minn. Mid. R. R.	787
apolis	M. & St. L. R. R.	825
o .. Miss. Riv.	U. S. Engineer Corps	794
iska L. W.	U. S. Engineer Corps	644
opa	St. P. & S. C. R. R.	871
o .. bridge, 68 feet above water	St. P. & S. C. R. R.	863
ota	C. & N. W. R. R.	1,179
ota City	C., M. & St. P. R. R.	677
ota Falls	C., M. & St. P. R. R.	1,041
o .. (foot of)	U. S. Engineer Corps	869
ota Lake	Do	1,038
tonka Lake	St. P. & P. R. R.	922
Creek	C., M. & St. P. R. R.	692
omery	M. & St. L. R. R.	1,063
cello, water	U. S. Engineer Corps	890
video	C., M. & St. P. R. R.	927
ead, Signal Station	U. S. Signal Office	923
o .. East bank Red River	N. P. R. R.	906
Lake, depot	L., S. & M. R. R. R.	1,054
.....	St. P. & P. R. R.	1,122
y	N. P. R. R.	1,222
i Prairie	C., M. & St. P. R. R.	660
tain Lake	St. P. & S. C. R. R.	1,300
rd's Siding	M. & St. L. R. R.	1,060
da	N. P. R. R.	1,085
ort	C., M. & St. P. R. R.	751
o .. L. W.	U. S. Engineer Corps	672
rague	M. & St. L. R. R.	973
ichland	M. & St. L. R. R.	1,178
lm	C. & N. W. R. R.	837
o .. high water in Minnesota River	C. & N. W. R. R.	808
et	C. & N. W. R. R.	980
.....	St. P. & S. C. R. R.	706
ger, water	U. S. Engineer Corps	665
in	N. P. R. R.	1,287
Branch	L. S., M. R. R. R.	885
field	C., M. & St. P. R. R.	915
le	St. P., S. & T. F. R. R.	879
.....	St. P. & P. R. R.	1,228
ake	N. P. R. R.	1,369
nd	C., M. & St. P. R. R.	1,265
.....	C., M. & St. P. R. R.	963
na	C., M. & St. P. R. R.	1,410
.....	C., M. & St. P. R. R.	1,032
ead	C. & N. W. R. R.	1,054
co	C. & N. W. R. R.	1,041
ville	C., M. & St. P. R. R.	990

Station.	Authority.	Elevation.
		<i>Ft.</i>
Osakis.....	St. P. & P. R. R.	1,389
Osbawa.....	C. & N. W. R. R.	992
Ottawa.....	St. P. & S. C. R. R.	790
Do... water.....	U. S. Engineer Corps	722
Owatonna.....	C. & N. W. R. R.	1,144
Do... crossing, C. & N. W. R. R.	C. M. & St. P. R. R.	1,144
Pembina.....	Toner	900
Pemidgi Lake.....	Toner	1,456
Perham.....	N. P. R. R.	1,308
Peterson.....	C. M. & St. P. R. R.	756
Pierre, Fort.....	Pacific R. R. Reports	828
Pike Lake.....	Pacific R. R. Reports	1,134
Pillager.....	N. P. R. R.	1,197
Pine City.....	L. S. & M. R. R. R.	946
Pine Island.....	C. & N. W. R. R.	998
Pipestone City.....	St. P. & S. C. R. R.	1,715
Do.....	C. M. & St. P. R. R.	1,693
Plainview.....	C. & N. W. R. R.	1,167
Do... Junction.....	C. & N. W. R. R.	1,275
Pomme de Terre.....	St. P. & P. R. R.	1,066
Do... Creek (mouth).....	U. S. Engineer Corps	948
Poplar Lake.....	P. R. R. Reports	1,502
Posts.....	C. & N. W. R. R.	835
Prior Lake, Station.....	C. M. & St. P. R. R.	940
Do... water.....	C. M. & St. P. R. R.	909
Qui Parle, Lake.....	Petermann	946
Rainy Lake.....	Hind	1,100
Ramsey, cross. S. Minn. R. R. & St. P. R. R.	C. M. & St. P. R. R.	1,215
Randall.....	St. P. & P. R. R.	1,045
Rapidan.....	C. M. & St. P. R. R.	979
Read's Landing.....	C. M. & St. P. R. R.	657
Do... L. W.....	U. S. Engineer Corps	683
Red Wing.....	C. M. & St. P. R. R.	687
Do... L. W.....	U. S. Engineer Corps	659
Redwood Falls.....	C. & N. W. R. R.	1,086
Reynville Trading Post.....		946
Reynville.....	C. M. & St. P. R. R.	1,064
Richmond.....	C. M. & St. P. R. R.	674
Ridgeley, Fort, water.....	U. S. Engineer Corps	793
Ripley, Fort.....	St. P. & P. R. R.	1,168
Rochester.....	C. & N. W. R. R.	991
Rolette.....	St. P. & P. R. R.	894
Rosemount.....	C. M. & St. P. R. R.	959
Rush City.....	L. S. & M. R. R. R.	911
Rushford.....	C. M. & St. P. R. R.	722
Rushmore.....	St. P. & S. C. R. R.	1,065
Sacred Heart.....	C. M. & St. P. R. R.	1,061
St. Anthony's Falls.....	Smithsonian Inst.	890
Do... Junction.....	St. P. & P. R. R.	838
Do... low water, Mississippi River.....	St. P. & P. R. R.	800
St. Augusta, water.....	U. S. Engineer Corps	946
St. Charles.....	C. & N. W. R. R.	1,139
St. Cloud, east shore Mississippi River.....	St. P. & P. R. R.	1,020
Do... west shore Mississippi River.....	St. P. & P. R. R.	1,034
Do... low water, Mississippi River.....	St. P. & P. R. R.	962
St. Cloud Mill, Mississippi River.....	U. S. Engineer Corps	960
Do... low water, Mississippi River.....	St. P. & P. R. R.	953
St. Croix Lake, draw-bridge.....	C. & N. W. R. R.	691
Do... low water.....		671
St. James.....	St. P. & S. C. R. R.	1,073
St. Johns.....	St. P. & P. R. R.	1,116
St. Joseph.....	St. P. & P. R. R.	1,074
St. Olaf.....	St. P. & P. R. R.	1,335

Station.	Authority.	Elevation.
		<i>Feet.</i>
St. Paul, extreme low water in Mississippi River, 1864.	U. S. Engineer Corps	683
Do.. ordinary low water	Mean result from R. R. levels..	685
Do.. high water, 1850.	U. S. Engineer Corps	702
Do.. Union Depot (old level)	Mean result from R. R. levels..	688
Do.. Union Depot (new level)	Mean result from R. R. levels..	702
Do.. Signal Station	U. S. Signal Office	811
St. Peter	C. & N. W. R. R.	812
Do.. water	U. S. Engineer Corps	729
St. Vincent, bank Red River	St. P. & P. R. R.	792
Do.. high water, 1866	St. P. & P. R. R.	787
Do.. usual water surface	St. P. & P. R. R.	758
Do.. Signal Station	U. S. Signal Office	804
Sakatah Lake	Toner	932
Sandy	C. & N. W. R. R.	1,089
Do. Lake	Toner	1,450
Sauk Center	St. P. & P. R. R.	1,232
Sauk Rapids	St. P. & P. R. R.	1,008
Shakopee, crossing of St. P. & S. C. R. R.	C., M. & St. P. R. R.	756
Do.. low water, Minnesota River	C., M. & St. P. R. R.	692
Do.. high water, Minnesota River	C., M. & St. P. R. R.	719
Sherburne	C., M. & St. P. R. R.	1,273
Shetek Lake	Petermann	1,518
Sicottes	N. P. R. R.	1,282
Sleepy Eye	C. & N. W. R. R.	1,034
Do.. Lake Station	C. & N. W. R. R.	1,020
Smith Lake	S., P. & P. R. R.	1,049
Snelling, Fort	Med. Dep., U. S. A.	820
South Bend	St. P. & S. C. R. R.	808
Do.. water	U. S. Engineer Corps	755
Spirit Lake	Toner	1,310
Split Rock, Geodetic Station	U. S. Lake Survey	765
Springfield	C. & N. W. R. R.	1,025
Spring Valley	C., M. & St. P. R. R.	1,266
Stanley	St. P. & P. R. R.	902
Stewart	C., M. & St. P. R. R.	1,064
Stillwater	St. P., S. & T. F. R. R.	680
Do.. low water in Saint Croix Lake	St. P., S. & T. F. R. R.	660
Stillwater Junction	C. & N. W. R. R.	876
Stockton	C. & N. W. R. R.	753
Sueur Lake	Petermann	1,011
Sumter	C., M. & St. P. R. R.	1,035
Superior, Lake	U. S. Engineer Corps	602
Swede Grove	St. P. & P. R. R.	1,186
Takara Lake		1,168
Theilman	Minn. Mid. R. R.	743
Thompson	N. P. R. R.	1,038
Tiger Lake	R. R. reports	979
Do.. water	C., M. & St. P. R. R.	979
Tintah	St. P. & P. R. R.	991
Tracey	C. & N. W. R. R.	1,403
Do	Minn. Mid. R. R.	756
Traverse Lake, water	U. S. Engineer Corps	950
Tumuli	St. P. & P. R. R.	1,196
Twin Lakes	M. & St. L. R. R.	1,255
Twin Rivers, water	St. P. & P. R. R.	1,117
Tyler	C. & N. W. R. R.	1,750
Upper Bass Lake	St. P., S. & T. F. R. R.	923
Utica	C. & N. W. R. R.	1,170
Victoria	St. P. & P. R. R.	1,366
Viola	C. & N. W. R. R.	1,129
Wabasha	C., M. & St. P. R. R.	712
Do.. water	U. S. Engineer Corps	656

Station.	Authority.	Elevation.
Wacouta, low water	U. S. Engineer Corps	65
Wadena	N. P. R. R.	1,350
Walnut Grove	C. & N. W. R. R.	1,220
Waseca	C. & N. W. R. R.	1,150
Watab	St. P. & P. R. R.	1,000
Do. Mississippi River	U. S. Engineer Corps	1,000
Waterville	M. & St. L. R. R.	1,000
Watson	C., M. & St. P. R. R.	1,020
Waverly	St. P. & P. R. R.	1,000
Wayzata	St. P. & P. R. R.	901
Weaver	C., M. & St. P. R. R.	674
Wells	C., M. & St. P. R. R.	1,153
Westcott	C., M. & St. P. R. R.	882
West Saint Cloud	St. P. & P. R. R.	1,025
West Sawteeth, Geodetic Station	U. S. Lake Survey	1,532
West Union	St. P. & P. R. R.	1,323
Whalan	C., M. & St. P. R. R.	786
White Bear	M. & St. L. R. R.	919
White Bear Lake Junction	L. S. & M. R. R. R.	928
White Earth	Toner	1,670
Wilder	St. P. & S. C. R. R.	1,448
Wild Rice	St. P. & P. R. R.	903
Willmar	St. P. & P. R. R.	1,124
Windom	St. P. & S. C. R. R.	1,353
Winnebago City	C., M. & St. P. R. R.	1,096
Winnibigoshish Lake	U. S. Engineer Corps	1,220
Winona	C., M. & St. P. R. R.	692
Do. low water	U. S. Engineer Corps	634
Win's Station	St. P., S. & T. F. R. R.	916
Withington	N. P. R. R.	1,272
Woods, Lake of the	Hinds	978
Woodstock	St. P. & S. C. R. R.	1,822
Worthington	St. P. & S. C. R. R.	1,582
Wykoff	C., M. & St. P. R. R.	1,310
Wyoming	L. S. & M. R. R. R.	899
Young America	C., M. & St. P. R. R.	990
Zumbro Falls	Minn. Mid. R. R.	836
Zumbrota	Minn. Mid. R. R.	980

MISSISSIPPI.

Station.	Authority.	Elevation.
		<i>Feet.</i>
.....	M. & N. W. R. R.	85
.....	M. & O. R. R.	244
.....	M. & O. R. R.	379
.....	N. O. & N. E. R. R.	306
t Louis.....	N. O., M. & T. R. R.	24
la.....	M. & O. R. R.	511
Summit.....	M. & O. R. R.	513
lle.....	M. & O. R. R.	275
ina.....	M. & O. R. R.	150
e.....	Memphis & C. R. R.	463
le.....	M. & N. W. R. R.	87
.....	N. O. & N. E. R. R.	276
.....	Memphis & C. R. R.	434
.....	M. & O. R. R.	316
.....	N. O. & N. E. R. R.	168
.....	M. & O. R. R.	210
chie.....	N. O. & N. E. R. R.	169
rl River.....	N. O. & N. E. R. R.	48
.....	M. & O. R. R.	306
.....	N. O. & N. E. R. R.	239
so.....	M. & O. R. R.	248
.....	N. O. & N. E. R. R.	260
.....	Memphis & C. R. R.	495
.....	M. & N. W. R. R.	936
od, on Yazoo River.....	V. & N. E. R. R.	154
...high water, Yazoo River.....	V. & N. E. R. R.	158
Miss. Cent. R. R.	V. & N. E. R. R.	213
.....	M. & O. R. R.	396
urg.....	N. O. & N. E. R. R.	144
rg.....	N. O. & N. E. R. R.	315
l.....	N. O. & N. E. R. R.	174
.....	Memphis & C. R. R.	455
n.....	M. & N. W. R. R.	86
.....	N. O. & N. E. R. R.	235
ale.....	M. & O. R. R.	213
.....	N. O. & N. E. R. R.	239
.....	M. & O. R. R.	360
Summit.....	.....	426
.....	M. & N. W. R. R.	87
.....	M. & O. R. R.	185
.....	M. & N. W. R. R.	93
.....	M. & O. R. R.	213
.....	M. & O. R. R.	336
pi City.....	N. O., M. & T. R. R.	10
s.....	N. O. & N. E. R. R.	69
.....	M. & O. R. R.	304
.....	M. & O. R. R.	183
brings.....	N. O., M. & T. R. R.	28
.....	N. O. & N. E. R. R.	219
.....	M. & O. R. R.	311
.....	N. O. & N. E. R. R.	282
istian.....	N. O. M. & T. R. R.	10
.....	N. O. & N. E. R. R.	271
Ridge.....	V. & N. E. R. R.	516
le.....	N. O. & N. E. R. R.	313
.....	M. & O. R. R.	311
.....	N. O. & N. E. R. R.	360
.....	M. & O. R. R.	231

Station.	Authority.	Elevation.
		<i>Feet.</i>
Rienzi.....	M. & O. R. R.....	441
Russells.....	Ala. G. S. R. R.....	412
Saltillo.....	M. & O. R. R.....	318
Scooba.....	M. & O. R. R.....	193
Shannon.....	M. & O. R. R.....	249
Shubuta.....	M. & O. R. R.....	197
Shugulak.....	M. & O. R. R.....	221
Sucarnochee.....	M. & O. R. R.....	225
Sulowah.....	N. O. & N. E. R. R.....	245
Tibbee.....	M. & O. R. R.....	207
Toomsnba.....	Ala. G. S. R. R.....	295
Tupelo.....	M. & O. R. R.....	280
Tuscanola.....	N. O. & N. E. R. R.....	223
Verona.....	M. & O. R. R.....	307
Vicksburg & Meridian Junction.....	N. O. & N. E. R. R.....	308
Vicksburg, Signal Station.....	U. S. Signal Office.....	244
Vossburg.....	N. O. & N. E. R. R.....	424
Wahalak.....	M. & O. R. R.....	187
Wantubbee.....	N. O. & N. E. R. R.....	349
Waynesboro'.....	M. & O. R. R.....	191
West Enterprise.....	N. O. & N. E. R. R.....	256
West Pascagoula.....	N. O., M. & T. R. R.....	8
West Point.....	M. & O. R. R.....	243
Winchester.....	M. & O. R. R.....	165
Yazoo Pass.....	M. & N. W. R. R.....	95

MISSOURI.

Station.	Authority.	Elevation.
		<i>Feet.</i>
a, H. W. Mississippi River, 1851.	Mo., Iowa & Neb. R. R.	487
.. L. W. Mississippi River, 1872..	Mo., Iowa & Neb. R. R.	465
W.	St. L., I. Mt. & S. R. R.	353
.....	U. S. Eng'r. Corps.	651
.....	K. C., St. J. & C. B. R. R.	833
.....	St. L., I. Mt. & S. R. R.	635
.....	Mo., Kans. & Tex. R. R.	968
.....	Mo., Iowa & Neb. R. R.	655
.....	St. L. & S. F. R. R.	708
.....	H. & St. J. R. R.	739
.....	St. L., I. Mt. & S. R. R.	335
.....	Toner	482
.....	W., St. L. & P. R. R.	906
.....	Smithsonian Inst	780
.....	St. L. & S. F. R. R.	1,357
.....	Mo., Kans. & Tex. R. R.	748
..... track station house	W., St. L. & P. R. R.	647
.....	St. L., I. Mt. & S. R. R.	417
.....	H. & St. J. R. R.	637
.....	K. C., St. J. & C. B. R. R.	943
..... station	Toner	512
.....	Toner	506
.....	Mo., Kans. & Tex. R. R.	765
..... k	H. & St. J. R. R.	589
.....	St. L., I. Mt. & S. R. R.	313
.....	Toner	470
.....	Toner	515
.....	Toner	317
.....	Toner	531
.....	K. C., St. J. & C. B. R. R.	769
..... crossing C., R., I. & P. R. R.	K. C., St. J. & C. B. R. R.	769
.....	H. & St. J. R. R.	780
.....	K. C., St. J. & C. B. R. R.	861
.....	C., G. & S. L. R. R.	317
.....	St. L. & S. F. R. R.	1,360
..... t.	St. L., I. Mt. & S. R. R.	321
.....	St. L., I. Mt. & S. R. R.	1,024
.....	St. L., I. Mt. & S. R. R.	592
.....	K. C., St. J. & C. B. R. R.	930
.....	Toner	1,000
..... mills.	Toner	542
..... sek	Toner	949
.....	Mo., Kans. & Tex. R. R.	607
.....	Toner	763
.....	St. L. & S. F. R. R.	941
..... ireen	L. & M. R. R.	881
.....	B. & S. R. R.	879
..... dge	H. & St. J. R. R.	926
.....	H. & St. J. R. R.	516
..... l	H. & St. J. R. R.	757
.....	St. L. & S. F. R. R.	1,289
..... ill	L. R., V. & Ark. R. R.	285
.....	B. & S. R. R.	760
..... k	W., St. L. & P. R. R.	644
..... sek	St. L. & S. F. R. R.	1,359
.....	St. L. & S. F. R. R.	897
.....	H. & St. J. R. R.	796

Station.	Authority.	Eleva
Bunkerhill	St. L. & S. F. R. R.	
Burton	Mo., Kans. & Tex. R. R.	
Bushberg	St. L., I. Mt. & S. R. R.	
Cadet	Toner	
Calhoun	Mo., Iowa & Neb. R. R.	
Cairo	W., St. L. & P. R. R.	
Calhoun	Mo., Kans. & Tex. R. R.	
California	Toner	
Callao	H. & St. J. R. R.	
Camden, Missouri River	W., S. L. & P. R. R.	
Cameron Junction	H. & St. J. R. R.	
Do..... crossing C., R. I. & P. grade	H. & St. J. R. R.	
Camp Branch	Mo., Kans. & Tex. R. R.	
Cane Ridge	L. R. V. & Ark. R. R.	
Caney Creek	St. L., I. Mt. & S. R. R.	
Cape Girardeau	C. G. & S. L. R. R.	
Carbon	H. & St. J. R. R.	
Carbon Center	R. H. R. R.	
Carrollton	W., St. L. & P. R. R.	
Carthage	St. L. & S. F. R. R.	
Cassville	Smithsonian Inst.	
Castle Creek	W., St. L. & P. R. R.	
Cedar City, 2d bottom of Missouri River.	L. & M. R. R.	
Centralia	W., St. L. & P. R. R.	
Centretown	Toner	
Centreville	Toner	
Chamais	Toner	
Charleston	St. L., I. Mt. & S. R. R.	
Chillicothe	H. & St. J. R. R.	
Do..... H. & St. J. R. R. crossing	W., St. L. & P. R. R.	
Chittenham	Toner	
Clapper	Mo., Kans. & Tex. R. R.	
Clarence	H. & St. J. R. R.	
Clark City	Mo., Iowa & Neb. R. R.	
Clifton	W., St. L. & P. R. R.	
Clinton	Mo., Kans. & Tex. R. R.	
Colvey	St. L. & S. F. R. R.	
Como	L. R. V. & Ark. R. R.	
Conception	W., St. L. & P. R. R.	
Converse	W., St. L. & P. R. R.	
Conway	St. L. & S. F. R. R.	
Cora	B. & S. R. R.	
Corning	K. C., St. J. & C. B. R. R.	
Cote Ronde	Toner	
Craig	K. C., St. J. & C. B. R. R.	
Crocker	St. L. & S. F. R. R.	
Crooked Creek Valley	St. L., S. & L. R. R.	
Cuba	St. L. & S. F. R. R.	
Dalton	W., St. L. & P. R. R.	
Dardenne, high water	W., St. L. & P. R. R.	
Darley	Toner	
Dayton	St. L. & S. F. R. R.	
Deen's Branch	Toner	
Deerfield	Mo., Kans. & Tex. R. R.	
De Lassus	St. L., I. Mt. & S. R. R.	
Des Arc	St. L., I. Mt. & S. R. R.	
De Soto	St. L., I. Mt. & S. R. R.	
De Witt	W., St. L. & P. R. R.	
Dexter	St. L., I. Mt. & S. R. R.	
Dillon	St. L. & S. F. R. R.	
Dixon	St. L. & S. F. R. R.	
Dorchester	St. L. & S. F. R. R.	

Station.	Authority.	Elevation.
		<i>Feet.</i>
ren	Toner	870
ynning	Mo., Iowa & Neb. R. R.	869
ier	Toner	455
Branch	St. L. & S. F. R. R.	835
dee	Smithsonian Inst	536
ch Town	C. G. & S. L. R. R.	329
Leavenworth depot.	K. C., S. J. & C. B. R. R.	764
on	H. & St. J. R. R.	912
ia	B. & M. R. R. R.	738
orn Prairie	St. L. & S. F. R. R.	1,409
on	Toner	715
.....	H. & St. J. R. R.	731
rson	W., St. L. & P. R. R.	866
l	Mo., Kans. & Tex. R. R.	662
nsville	Mo., Kans. & Tex. R. R.	731
field .....	.....	977
Grounds	H. & C. M. R. R.	518
view	Toner	977
ner's City	Toner	885
.....	Mo., Kans. & Tex. R. R.	657
uson	W., St. L. & P. R. R.	505
es	K. C., St. J. & C. B. R. R.	848
st City	K. C., St. J. & C. B. R. R.	859
uklin	Mo., Kans. & Tex. R. R.	591
ks	St. L. & S. F. R. R.	935
ier	W., St. L. & P. R. R.	957
ericktown	St. L., I. Mt. & S. R. R.	721
on	L. & M. R. R. R.	843
.....	St. L., I. Mt. & S. R. R.	843
Hill .....	.....	785
gher	Toner	483
onade	L. & L. M. R. R. R.	630
cow	St. L., I. Mt. & S. R. R.	458
Allen	Toner	568
dale	W., St. L. & P. R. R.	998
wood Junction	Mo., Iowa & Neb. R. R.	990
Do	cross St. L., K. C. & N. R. R. at grade.	
er	W., St. L. & P. R. R.	935
by City	St. L. & S. F. R. R.	1,027
d Prairie	St. L. & S. F. R. R.	1,363
ger	Mo., Iowa & Neb. R. R.	759
s Ridge	St. L., I. Mt. & S. R. R.	300
utfield	Smithsonian Inst	1,800
utfield's Landing	Toner	320
u Prairie	St. L. & S. F. R. R.	1,374
u Ridge	Mo., Kans. & Tex. R. R.	903
n Top	W., St. L. & P. R. R.	992
nwood	Toner	907
's Creek	Toner	531
.....	K. C., St. J. & C. B. R. R.	803
iday	Mo., Kans. & Tex. R. R.	772
ls	H. & St. J. R. R.	804
nilton	H. & St. J. R. R.	987
acock	St. L. & S. F. R. R.	1,109
unibal, crossing H. & St. J. R. R.	H. & N. R. R.	470
Do... high water Mississippi River, 1851	H. & St. J. R. R.	469
Do... low water Mississippi River, 1851.	H. & St. J. R. R.	447
Do... depot	H. & St. J. R. R.	470
Do... junction with H. & St. J., B. & Mo. R. & T. W. & W. R. R.	Mo., Kans. & Tex. R. R.	469
arlem	H. & St. J. R. R.	735
Do. depot	K. C., St. J. & C. B. R. R.	746
Do. semaphore	K. C., St. J. & C. B. R. R.	749

Station.	Authority.	Elev.
Harris.....	Mo., Kans. & Tex. R. R.....	
Hassard.....	Mo., Kans. & Tex. R. R.....	
Hematite.....		
Hendrickson.....	St. L., I. Mt. & S. R. R.....	
Hermann.....	Smithsonian Inst.....	
Hermitage.....	Toner.....	
Do.....	St. L. & S. F. R. R.....	
Hibernia.....	L. & M. R. R. R.....	
Higbee.....	Mo., Kans. & Tex. R. R.....	
Higginsville, Lex. & St. L. R. R.....	L. & M. R. R. R.....	
Hogan.....	St. L., I. Mt. & S. R. R.....	
Holt.....	H. & St. J. R. R.....	
Hopewell Summit.....	St. L., I. Mt. & S. R. R.....	
Hopkins.....	K. C., St. J. & C. B. R. R.....	
Howard.....	R. H. R. R.....	
Howland.....	B. & S. R. R.....	
Hunnewell.....	H. & St. J. R. R.....	
Hunterville.....	W., St. L. & P. R. R.....	
Independence.....	L. & M. R. R. R.....	
Iron Centre.....	St. L. & S. F. R. R.....	
Irondale.....	St. L., I. Mt. & S. R. R.....	
Iron Mountain Station.....	St. L., I. Mt. & S. R. R.....	
Iron Switch.....	St. L. & S. F. R. R.....	
Ironton.....	St. L., I. Mt. & S. R. R.....	
Jacksonville.....	W., St. L. & P. R. R.....	
Jameson.....	W., St. L. & P. R. R.....	
Jefferson Barracks.....	St. L., I. Mt. & S. R. R.....	
Jerome.....	St. L. & S. F. R. R.....	
Joplin.....	S. C. & J. R. R.....	
Kansas City, Union Depot.....	Mean result from R. R. levels.....	
Do.....Grand avenue.....	U. T. Co. R. R.....	
Do.....high water, 1844.....	H. & St. J. R. R.....	
Do.....Missouri River, opposite.....	W., St. L. & P. R. R.....	
Do.....high water, south pier of bridge.....	K. C., St. J. & C. B. R. R.....	
Do.....track on bridge.....	K. C., St. J. & C. B. R. R.....	
Kearney.....	H. & St. J. R. R.....	
Keytesville, bottom Chariton.....	W., St. L. & P. R. R.....	
Kidder.....	H. & St. J. R. R.....	
Kimmswick.....	St. L., I. Mt. & S. R. R.....	
King's Prairie.....	St. L. & S. F. R. R.....	
Kingsville.....	Toner.....	
Kirksville.....	W., St. L. & P. R. R.....	
Do.....junction Saint Louis, Kansas City & Northern Railroad.....	B. & M. R. R. R.....	
Kirkwood.....	Toner.....	
Knob Lick.....	St. L., I. Mt. & S. R. R.....	
Knobnoster.....	Toner.....	
Knobview.....	St. L. & S. F. R. R.....	
Knox.....	B. & M. R. R. R.....	
Labadie.....	Toner.....	
La Belle.....	B. & M. R. R. R.....	
La Clede.....	B. & S. R. R.....	
Do.....crossing B. & S. W., grade at.....	H. & St. J. R. R.....	
La Due.....	Mo., Kans. & Tex. R. R.....	
Ladlin.....	St. L., I. Mt. & S. R. R.....	
Lakenan.....	H. & St. J. R. R.....	
Lake Station, side track.....	K. C., St. J. & C. B. R. R.....	
Do.....crossing H. & St. J. R. R.....	K. C., St. J. & B. R. R.....	
Lakeville.....	C. G. & S. L. R. R.....	
La Monte.....	Toner.....	
Lancaster.....	Mo., Iowa & Neb. R. R.....	
Lanson.....	W., St. L. & P. R. R.....	
La Plata.....	W., St. L. & P. R. R.....	

Station.	Authority.	Elevation.
		<i>Feet.</i>
pp.....	W., St. L. & P. R. R.....	948
urg.....	St. L. & S. F. R. R.....	1,030
on.....	St. L. & S. F. R. R.....	1,269
is.....	B. & S. R. R.....	1,078
er.....	H. & St. J. R. R.....	790
	Mo., Kans. & Tex. R. R.....	785
Prairie.....	L. R. V. & Ark. R. R.....	311
y.....	H. & St. J. R. R.....	846
y Landing.....	W., St. L. & P. R. R.....	735
	H. & S. J. R. R.....	809
	B. & S. R. R.....	425
River.....	L. R. V. & Ark. R. R.....	290
's.....	St. L. & S. F. R. R.....	1,370
ana.....	L. & M. R. R. R.....	460
... top of bluffs.....	L. & M. R. R. R.....	650
Lake.....	W., St. L. & P. R. R.....	896
	Mo., Iowa & Neb. R. R.....	737
l.....	W., St. L. & P. R. R.....	980
(cross. St. L., K. C. & N. R. R., where		
ris 22.5 feet higher.....	H. & St. J. R. R.....	864
, depot.....	H. & St. J. R. R.....	867
rk's.....	Toner.....	585
n.....	Mo., Kans. & Tex. R. R.....	772
.....	L. R. V. & Ark. R. R.....	297
..... Creek.....	W., St. L. & P. R. R.....	854
..... Hill.....	Toner.....	411
.....sville.....	St. L. & S. F. R. R.....	1,338
and.....	St. L., I. Mt. & S. R. R.....	570
all.....	L. & M. R. R. R.....	578
field.....	St. L. & S. F. R. R.....	1,483
ville.....	K. C., St. J. & C. B. R. R.....	1,037
f Summit.....	W., St. L. & P. R. R.....	1,027
od Station.....	B. & M. R. R. R.....	524
ille.....	H. & St. J. R. R.....	729
is, county-seat.....	Mo., Iowa & Neb. R. R.....	749
.....town.....	Mo., Iowa & Neb. R. R.....	787
ta.....	B. & S. R. R.....	885
ac.....	Toner.....	435
ae.....	Toner.....	419
.....	W., St. L. & P. R. R.....	798
brook.....	Toner.....	1,144
.....	B. & S. R. R.....	840
.....	W., S. L. & P. R. R.....	970
s Landing.....	Toner.....	508
pring.....	St. L., I. Mt. & S. R. R.....	443
l Point.....	St. L., I. Mt. & S. R. R.....	863
	C. G. & S. L. R. R.....	338
Swamp.....	C. G. & S. L. R. R.....	326
ri City.....	W., St. L. & P. R. R.....	722
ly.....	W., St. L. & P. R. R.....	867
..... junc. with St. L., K. C. & N. R. R.....	Mo., Kans. & Tex. R. R.....	865
au.....	Toner.....	904
.....	Mo., Kans. & Tex. R. R.....	728
omery City.....	W., St. L. & P. R. R.....	831
ae.....	Mo., Kans. & Tex. R. R.....	824
	H. & St. J. R. R.....	473
.....villo.....	H. & St. J. R. R.....	921
On.....	Toner.....	522
.....	St. L., I. Mt. & S. R. R.....	345
.....	St. L. & S. F. R. R.....	500
.....	H. & St. J. R. R.....	734
ville.....	St. L., I. Mt. & S. R. R.....	306

Station.	Authority.	Elevation.
Neosho	St. L. & S. F. R. R.	1,021
Nettleton	H. & St. J. R. R.	987
Nevada	Mo., Kans. & Tex. R. R.	857
New Bourbon	Toner	857
New Cambria	H. & St. J. R. R.	857
New Madrid	L. R. V. & Ark. R. R.	25
Newport	Toner	4
New Springfield	Toner	1,53
Niangua	St. L. & S. F. R. R.	1,4
Nibbard	W., St. L. & P. R. R.	1,05
Nishnabotna, side track	K. C., St. J. & C. B. R. R.	87
Nodaway, side track	K. C., St. J. & C. B. R. R.	85
North Lexington, bank Missouri River	W., St. L. & P. R. R.	69
North Mo. Junction	W., St. L. & P. R. R.	74
North River	H. & St. J. R. R.	47
Nosborne	W., St. L. & P. R. R.	70
Oakland	Toner	61
Ogden	Toner	50
Ohio City	Toner	50
Oregon	Toner	1,10
Osage City	Toner	54
Osborne	H. & St. J. R. R.	1,03
Oterville	Toner	69
Pacific City	St. L. & S. F. R. R.	45
Palmyra Junction	H. & St. J. R. R.	64
Paris	Mo., Kans. & Tex. R. R.	65
Parkville	K. C., St. J. & C. B. R. R.	75
Pattonsburgh	W., St. L. & P. R. R.	77
Pendleton (summit)	W., St. L. & P. R. R.	91
Pevely	St. L., I. Mt. & S. R. R.	44
Phelps	K. C., St. J. & C. B. R. R.	89
Pickering	K. C., St. J. & C. B. R. R.	1,02
Piedmont	St. L., I. Mt. & S. R. R.	50
Pierce City	St. L. & S. F. R. R.	1,17
Pilot Grove	Mo., Kans. & Tex. R. R.	83
Platte River	W., St. L. & P. R. R.	819
Plattsburgh	W., St. L. & P. R. R.	94
Pleasant Green	Mo., Kans. & Tex. R. R.	775
Plymouth	St. L. & S. F. R. R.	1,326
Pollock	B. & S. R. R.	943
Poplar Bluff	St. L., I. Mt. & S. R. R.	343
Do.....bank Black River	C. G. & S. L. R. R.	326
Prairie City		771
Prairie Lick	Mo., Kans. & Tex. R. R.	685
Purdin	B. & S. R. R.	887
Queen City	W., St. L. & P. R. R.	1,004
Reelsville		599
Reeves	Toner	372
Rensselaer	Mo., Kans. & Tex. R. R.	733
Rhineland	Smithsonian Inst.	800
Rich Hill	R. H. R. R.	784
Richland	St. L. & S. F. R. R.	1,143
Richmond	W., St. L. & P. R. R.	809
Richmond and Lexington Junction	W., St. L. & P. R. R.	699
Ritehey	St. L. & S. F. R. R.	1,066
Robertson	H. & St. J. R. R.	870
Rockville	Mo., Kans. & Tex. R. R.	771
Rolla	St. L. & S. F. R. R.	1,085
Roseberry	W., St. L. & P. R. R.	97
Rosedale	K. C., Ft. S. & G. R. R.	79
Rosehill	Toner	59
Rosendale	K. C., St. J. & C. B. R. R.	92
Round Grove	H. & St. J. R. R.	83

Station.	Authority.	Elevation.
		<i>Feet.</i>
	K. C., St. J. & C. B. R. R.	798
	Mo., Kans. & Tex. R. R.	790
t	Toner	527
rine	H. & St. J. R. R.	797
es, bank Missouri River, opposite.	W., St. L. & P. R. R.	444
... R. R. bridge floor	W., St. L. & P. R. R.	504
	St. L. & S. F. R. R.	759
isville	C. G. & S. L. R. R.	333
ieve	Toner	372
	St. L. & S. F. R. R.	1, 117
h, bank Missouri River	W., St. L. & P. R. R.	823
... bridge crossing	K. C., St. J. & C. B. R. R.	826
... Francis street	K. C., St. J. & C. B. R. R.	824
... L. W. in Missouri River	St. J. & D. C. R. R.	792
... H. W. in Missouri River	St. J. & D. C. R. R.	812
... depot	H. & St. J. R. R.	825
... crossing St. L., R. C. & N. R. R.	H. & St. J. R. R.	827
... cross. K. C., St. J. & C. B. R. R.	H. & St. J. R. R.	839
old station	St. L., I. Mt. & S. R. R.	418
city directrix	Levels of Miss. River Com.	413
do.	U. S. C. & G. S.	416
Union Depot	City Engineer	431
Fourth street	St. L., V. & T. H. R. R.	470
H. W. 1844	City Engineer	428
L. W. Miss. R.	City Engineer	379
bed Mississippi River	St. L., V. & T. H. R. R.	363
bronze plate on W. land pier of great bridge	U. S. C. & G. S.	461
Signal Station	U. S. Signal Office	568
	Toner	428
	St. L., S. & L. R. R.	1, 182
ty	L. & M. R. R.	650
Junction	W., St. L. & P. R. R.	721
	K. C., St. J. & C. B. R. R.	709
y, new station	K. C., St. J. & C. B. R. R.	1, 100
old station	K. C., St. J. & C. B. R. R.	1, 023
	H. & St. J. R. R.	881
y	Mo., Kans. & Tex. R. R.	754
's Gat.	St. L. & S. F. R. R.	1, 367
	Toner	622
unction M. P. & St. L. & L. R. R.	Mo., Kans. & Tex. R. R.	907
	St. L. & S. F. R. R.	851
	K. C., Ft. S. & G. R. R.	921
	H. & St. J. R. R.	779
	St. L., I. Mt. & S. R. R.	330
Mountain	St. L., S. & L. R. R.	1, 250
	St. L. & S. F. R. R.	1, 209
ork	W., St. L. & P. R. R.	879
	Toner	888
int.	Toner	510
	R. H. R. R.	917
reek	St. L., S. & L. R. R.	1, 123
ld	St. L. & S. F. R. R.	1, 352
	St. L. & S. F. R. R.	1, 479
	W., St. L. & P. R. R.	876
	St. L. & S. F. R. R.	867
ville	H. & St. J. R. R.	958
	Smithsonian Inst.	800
	St. L. & S. F. R. R.	1, 166
le	Mo., Kans. & Tex. R. R.	605
	W., St. L. & P. R. R.	847
ke	K., C. St. J. & C. B. R. R.	794
	St. L. & S. F. R. R.	967
prings	St. L., I. Mt. & S. R. R.	411

Station.	Authority.	Elevation.
		<i>Feet.</i>
Sutton.....	Toner.....	470
Sylvania.....	Toner.....	339
Syracuse.....	Toner.....	944
Talbott.....	Mo., Kans. & Tex. R. R.....	620
Tailors.....	St. L. & S. F. R. R.....	1,004
Taylorville.....	Toner.....	470
Tipton.....	Toner.....	944
Tip-top Summit.....	St. L., I. Mt. & S. R. R.....	1,200
Tolona.....	B. & M. R. R. R.....	697
Tower Grove.....	Smithsonian Inst.....	500
Turnback Summit.....	St. L. & S. F. R. R.....	1,383
Turney.....	H. & St. J. R. R.....	1,048
Tuscumbia.....	Smithsonian Inst.....	600
Union.....	Smithsonian Inst.....	616
Unionville.....	B. & S. R. R.....	1,068
Utica.....	H. & St. J. R. R.....	739
Verona.....	St. L. & S. F. R. R.....	1,262
Waldron.....	K. C., St. J. & C. B. R. R.....	757
Walker's.....	Mo., Kans. & Tex. R. R.....	856
Warrenton.....	W., St. L. & P. R. R.....	853
Washington.....	Toner.....	487
Watson.....	K. C., St. J. & C. B. R. R.....	904
Wayland.....	Mo., Iowa & Neb. R. R.....	531
Webster.....	.....	525
Wellsburgh.....	Toner.....	778
Weston.....	K. C., St. J. & C. B. R. R.....	773
West Plattsburgh, summit.....	W., St. L. & P. R. R.....	1,020
West Quincy.....	H. & St. J. R. R.....	483
Do.....high-water in Missouri River.....	H. & St. J. R. R.....	477
Do.....junction with H. & S. J. R. R.....	B. & M. R. R. R.....	489
Wheeling.....	H. & St. J. R. R.....	740
Williamsville.....	St. L., I. Mt. & S. R. R.....	401
Windsor.....	Mo., Kans. & Tex. R. R.....	875
Windthrop.....	H. & St. J. R. R.....	801
Winthrop, junction.....	K. C., St. J. & C. B. R. R.....	789
Do.....depot.....	K. C., St. J. & C. B. R. R.....	789
Do.....top of rail C. & A. bridge.....	K. C., St. J. & C. B. R. R.....	798
Do.....crossing R. I. & P. R. R.....	K. C., St. J. & C. B. R. R.....	782
Woodend.....	St. L. & S. F. R. R.....	1,113
Woodland.....	H. & St. J. R. R.....	679
Yeatman.....	Toner.....	485

MONTANA.

Station.	Authority.	Elevation.
		<i>Feet.</i>
	N. P. R. R.	2, 272
	N. P. R. R.	2, 299
	Hayden	4, 396
	De Lacy	6, 337
	N. P. R. R.	3, 057
	N. P. Transcontinental Survey.	7, 420
Fort, Signal Station	U. S. Signal Office	2, 650
	N. P. R. R.	4, 675
	Ludlow	4, 538
	De Lacy	5, 596
ich	De Lacy	5, 665
	De Lacy	5, 437
	N. P. R. R.	3, 757
	N. P. R. R.	2, 639
	Hayden	4, 464
	De Lacy	4, 888
	Pre. R. R. levels	3, 845
	N. P. R. R.	4, 435
	N. P. R. R.	2, 405
	N. P. Transcontinental Survey.	2, 600
, Signal Station	U. S. Signal Office	2, 674
	N. P. R. R.	2, 688
	N. P. R. R.	4, 070
	N. P. R. R.	3, 115
		2, 480
	N. P. Transcontinental Survey.	5, 540
ency		3, 169
ount	Hayden	10, 134
.... Timber line on	Hayden	9, 550
	N. P. R. R.	3, 564
ich	Hayden	4, 825
	Ludlow	4, 873
(opposite)	Pre. R. R. levels	4, 904
	De Lacy	5, 000
ss	P. R. R. Reports	6, 030
	Hayden	4, 900
	Wheeler	4, 839
	N. P. R. R.	4, 752
ings	Ludlow	4, 957
ss	Ludlow	6, 147
ak	N. P. Transcontinental Survey.	9, 106
o	Hayden	9, 002
	N. P. R. R.	4, 725
	N. P. R. R.	12, 167
ss	Pacific R. R. Reports	6, 044
Jordan		2, 990
	Ludlow	2, 247
	N. P. Transcontinental Survey.	4, 947
	Pre. R. R. levels	4, 262
	N. P. R. R.	2, 066
	N. P. R. R.	4, 123
	N. P. R. R.	4, 735
	N. P. Transcontinental Survey.	5, 820
	N. P. Transcontinental Survey.	10, 737
	De Lacy	4, 995
file Pass	N. P. R. R.	3, 946
nt	Hayden	10, 351
	N. P. Transcontinental Survey.	11, 178

Station.	Authority.	Elev.
Custer	N. P. R. R.	
Deer Lodge	Stewart	
Deer Lodge Pass	N. P. R. R. Surveys	
Delano, Mount	Hayden	
Do..... Timber line on	Hayden	
De Smet	N. P. R. R.	
Dixon	N. P. R. R.	
Drummond	N. P. R. R.	
Eddy	N. P. R. R.	
Electric Peak	Hayden	
Do..... Timber line on	Hayden	
Elk Peak	N. P. Transcontinental Survey.	
Ellis, Fort	Hayden	
Do.....	Ludlow	
Ellis, Mount	N. P. Transcontinental Survey.	
Elliston	N. P. R. R.	
Elton	N. P. R. R.	
Emigrant Peak	Hayden	
Evaro	N. P. R. R.	
Fallon	N. P. R. R.	
Fish Creek Station		
Flathead Lake	Pacific R. R. Reports	
Do.. Pass, Bridger range	Hayden	
Forsyth	N. P. R. R.	
Gaffney's Station	De Lacy	
Gallatin	N. P. R. R.	
Do.....	Hayden	
Garrison	N. P. R. R.	
Glendive	N. P. R. R.	
Gordon	N. P. R. R.	
Grayling	U. & N. R. R.	
Greycliff	N. P. R. R.	
Halfway House	Pre. R. R. levels	
Hamilton	Hayden	
Do.....	N. P. R. R.	
Hamilton's, Jeff. Davis Gulch	De Lacy	
Hathaway	N. P. R. R.	
Helena	Hayden	
Do.....	N. P. R. R.	
Do.....	De Lacy	
Do. B. M. in	Pre. R. R. levels	
Do. corner stone in basement of old school house	Pre. R. R. levels	
Do. Signal Station	U. S. Signal Office	
Hellgate	Toner	
Heron	N. P. R. R.	
Highwood Peak	N. P. Transcontinental Survey.	
Hilgard, Mount	Hayden	
Hodges	N. P. R. R.	
Hope	N. P. R. R.	
Hopley's Hole	Ludlow	
Horse Plain	N. P. R. R.	
Horton	N. P. R. R.	
Howard	N. P. R. R.	
Huntley	N. P. R. R.	
Jefferson Bridge	De Lacy	
Jefferson City	De Lacy	
Jefferson City	Pre. R. R. levels	
Joeko	N. P. R. R.	
Judith Gap	N. P. Transcontinental Survey.	
Judith Peak	N. P. Transcontinental Survey.	
Keogh, Fort	N. P. R. R.	
Last Spike	N. P. R. R.	
Laurel	N. P. R. R.	

Station.	Authority.	Elevation.
		<i>Feet.</i>
, Camp	Ludlow	3,890
, and Clarke's Pass	P. R. R. Reports	6,323
ty Peak	Hayden	9,162
s Blackfoot Pass	Pacific R. R. Reports	6,250
gston	N. P. R. R.	4,485
ine's	De Lacy	4,992
l's	De Lacy	5,465
ellan	N. P. R. R.	2,685
oud's Peak	Mullan	7,500
on Pass	Pacific R. R. Reports	6,911
nis, Fort	N. P. Transcontinental Survey	4,310
n	N. P. Transcontinental Survey	4,700
s Pass	N. P. Transcontinental Survey	8,500
ndale	N. P. Transcontinental Survey	4,707
City	N. P. R. R.	2,353
n	N. P. R. R.	2,114
ula	N. P. R. R.	3,195
asin Peak	N. P. Transcontinental Survey	5,547
da	U. & N. R. R.	6,804
ana City	De Lacy	4,191
an	N. P. R. R.	2,245
Agate Springs	Ludlow	5,106
	N. P. R. R.	5,500
n's Pass	Mullan	5,980
n, tunnel summit	N. P. R. R.	5,548
s	N. P. R. R.	2,657
da City	Hayden	5,548
n	N. P. R. R.	2,186
baldy	Hayden	9,711
	N. P. Transcontinental Survey	4,540
, Fort	Toner	3,284
ed Rock	N. P. R. R.	3,953
City	N. P. R. R.	3,385
n's Bridge, Jefferson River	Hayden	4,083
a	N. P. R. R.	2,493
rook	N. P. Transcontinental Survey	4,260
r	N. P. R. R.	4,290
ine's	De Lacy	5,826
ey's Pillar	N. P. R. R.	2,869
pine Butte	N. P. Transcontinental Survey	6,970
olds' Pass	Pre. R. R. levels	6,838
side	N. P. R. R.	2,777
oud	N. P. R. R.	2,460
ury Station, on the bench	Pre. R. R. levels	4,720
ers	N. P. R. R.	2,593
, Fort, Signal Station	U. S. Signal Office	3,470
dan	De Lacy	5,221
ah	Mullan	7,200
n Nez Percé Pass	Pacific R. R. Reports	8,000
x Mountain	Hayden	10,880
dale	N. P. R. R.	4,188
g Hill	U. & N. R. R.	6,199
re Butte,	N. P. Transcontinental Survey	5,750
etts	De Lacy	5,217
water	N. P. R. R.	3,570
ee Pass	Pre. R. R. levels	7,079
mile Station	De Lacy	4,244
	N. P. R. R.	2,240
s Buttes, highest	Pacific R. R. Reports	6,700
send	N. P. R. R.	3,809
s Creek	N. P. R. R.	2,375
Peaks	N. P. Transcontinental Survey	7,413
t	N. P. Transcontinental Survey	4,540
n Pass	Hayden	7,923

Station.	Authority.	Elevation.
		<i>Fet.</i>
U. N. Junction.....	N. P. R. R.....	4,315
Utica.....	N. P. Transcontinental Survey	4,430
Virginia City.....	Hayden.....	5,824
Do.....	De Lacy.....	5,778
Do.....Signal Station.....	U. S. Signal Office.....	5,480
Ward's Peak.....	Hayden.....	10,371
Do.....timber line on.....	Hayden.....	9,156
Warm Springs Hotel.....	Pre. R. R. levels.....	4,296
Watson's Stage Station.....	Pre. R. R. levels.....	5,209
Wedge Mountain.....	Hayden.....	10,342
Whitehall Stage Station.....	Pre. R. R. levels.....	4,493
Williams.....	U. & N. R. R.....	6,603
Wolf Butte.....	N. P. Transcontinental Survey	4,700

NEBRASKA.

Station.	Authority.	Elevation.
		<i>Feet.</i>
.....	A. & N. R. R.	1,250
.....	O. N. & B. H. R. R.	1,756
.....	U. P. R. R.	1,922
.....	St. J. & D. C. R. R.	1,308
.....	U. P. R. R.	3,063
.....	R. V. & B. & C. R. R.	1,944
.....	B. & M. R. R. R.	1,693
.....	U. P. R. R.	4,712
.....	R. V. & B. & C. R. R.	2,177
.....	B. & M. R. R. R.	1,226
.....	B. & M. R. R. R.	1,101
.....	B. & M. R. R. R.	1,052
.....	B. & M. R. R. R.	1,803
.....	B. & M. R. R. R.	1,847
.....	Toner	3,421
k	S. C. & P. R. R.	1,602
.....	B. & M. R. R. R.	1,261
k	S. C. & P. R. R.	1,175
i	A. & N. R. R.	1,451
.....	St. J. & D. C. R. R.	1,501
l	R. V. & B. & C. R. R.	2,975
.....	B. & M. R. R. R.	1,256
.....	U. P. R. R.	1,404
.....	B. & M. R. R. R.	1,428
f	U. P. R. R.	3,371
.....	S. C. & P. R. R.	1,100
on	R. V. & B. & C. R. R.	1,848
.....	B. & M. R. R. R.	1,978
.....	B. & M. R. R. R.	1,725
nd	U. P. R. R.	2,657
.....	O. & R. V. R. R.	1,687
.....	Toner	4,200
e	B. & M. R. R. R.	894
.....	R. V. & B. & C. R. R.	1,377
.....	R. V. & B. & C. R. R.	1,367
.....	S. C. & P. R. R.	1,691
.....	R. V. & B. & C. R. R.	2,262
.....	B. & M. R. R. R.	1,275
Port	Toner	1,327
.....	St. J. & D. C. R. R.	1,554
.....	R. V. & B. & C. R. R.	1,998
k	B. & M. R. R. R.	1,028
ty	B. & M. R. R. R.	1,708
l	U. P. R. R.	1,775
.....	.....	5,702
.....	B. & M. R. R. R.	1,435
.....	R. V. & B. & C. R. R.	1,621
rt .....	.....	1,876
.....	U. P. R. R.	1,628
k	O. & R. V. R. R.	1,185
.....	Toner	1,518
.....	U. P. R. R.	1,453
.....	B. & M. R. R. R.	1,801
.....	U. P. R. R.	2,501
.....	B. & M. R. R. R.	1,368
.....	S. C. & P. R. R.	1,285
.....	R. V. & B. & C. R. R.	2,572
.....	Toner	1,090

Station.	Authority.	El
Davenport	St. J. & D. C. R. R.	
David City	A. & N. R. R.	
Dawson	A. & N. R. R.	
De Soto	Toner	
Denton	B. & M. R. R. R.	
Dewitt	B. & M. R. R. R.	
Dexter	Toner	
Diller	R. V. & B. & C. R. R.	
Dorchester	B. & M. R. R. R.	
Dunbar	B. & M. R. R. R.	
Duncan	U. P. R. R.	
Eden	St. J. & D. C. R. R.	
El Dorado	Toner	
Elk Creek	A. & N. R. R.	
Elk Horn	U. P. R. R.	
Elm Creek	U. P. R. R.	
Emerald	A. & N. R. R.	
Emerson	Toner	
Endicott	R. V. & B. & C. R. R.	
Exeter	B. & M. R. R. R.	
Fairbury	St. J. & D. C. R. R.	
Fairfield	St. J. & D. C. R. R.	
Fairmont	B. & M. R. R. R.	
Falls City	A. & N. R. R.	
Firth	A. & N. R. R.	
Fontenelle	Smithsonian Inst.	
Franklin	R. V. & B. & C. R. R.	
Fremont	U. P. R. R.	
Friendville	B. & M. R. R. R.	
Gannett	U. P. R. R.	
Garrison	A. & N. R. R.	
Genoa	O. N. & B. H. R. R.	
Georgetown	St. J. & D. C. R. R.	
Germantown	B. & M. R. R. R.	
Gibbon	U. P. R. R.	
Gibraltar	A. & N. R. R.	
Gilmore	U. P. R. R.	
Glendale	Smithsonian Inst.	
Grafton	B. & M. R. R. R.	
Grand Island	U. & P. R. R.	
Gratton, Fort	Warren	
Greenwood	B. & M. R. R. R.	
Guide Rock	R. V. & B. & C. R. R.	
Hampton	B. & M. R. R. R.	
Harlowe	R. V. & B. & C. R. R.	
Hardy	R. V. & B. & C. R. R.	
Harvard	B. & M. R. R. R.	
Hastings	R. & M. R. R. R.	
Heigler	R. V. & B. & C. R. R.	
Hickman	A. & N. R. R.	
Hooper	S. C. & P. R. R.	
Hubbell	R. V. & B. & C. R. R.	
Humboldt	A. & N. R. R.	
Humphreys	O. N. & B. H. R. R.	
Idaho	St. J. & D. C. R. R.	
Inevale	R. V. & B. & C. R. R.	
Indianola	R. V. & B. & C. R. R.	
Inland	B. & M. R. R. R.	
Iowa	Smithsonian Inst.	
Jefferson	St. J. & D. C. R. R.	
Johnson	B. & M. R. R. R.	
Junata	B. & M. R. R. R.	
Katoka	Smithsonian Inst.	
Kearney Junction	U. P. R. R.	

Station.	Authority.	Elevation.
		<i>Feet.</i>
Kenesaw.....	U. P. R. R.....	2,088
Kennard.....	S. C. & P. R. R.....	1,157
Ketcham.....	Toner.....	1,272
Liberty.....	R. V. & B. & C. R. R.....	1,272
Lincoln.....	B. & M. R. R. R.....	1,155
Lockwood.....	Toner.....	1,800
Lodge Pole.....	U. P. R. R.....	3,833
Lost Creek.....	O. N. & B. H. R. R.....	1,500
Louisville.....	B. & M. R. R. R.....	1,040
Lowell.....	B. & M. R. R. R.....	2,076
McCook.....	R., V., B. & C. R. R.....	2,511
McPherson.....	.....	2,695
Madison.....	O. N. & B. H. R. R.....	1,585
Malcolm.....	B. & M. R. R. R.....	1,291
Marquette.....	B. & M. R. R. R.....	1,825
Maxwell.....	U. P. R. R.....	2,718
Mead.....	O. & R. V. R. R.....	1,218
Max.....	R., V., B. & C. R. R.....	2,880
Milford.....	A. & N. R. R.....	1,414
Millard.....	U. P. R. R.....	1,078
Mitchell, Camp.....	.....	3,891
Munson.....	O. N. & B. H. R. R.....	1,595
Napanee.....	R., V., B. & C. R. R.....	1,878
Nebraska City.....	B. & M. R. R. R.....	941
Nemaha City.....	B. & M. R. R. R.....	885
Newark.....	B. & M. R. R. R.....	2,126
Newcastle.....	Toner.....	800
Newton.....	B. & M. R. R. R.....	1,151
Nichols.....	.....	2,920
Nickerson.....	S. C. & P. R. R.....	1,211
Norfolk.....	S. C. & P. R. R.....	1,532
North Bend.....	U. P. R. R.....	1,279
North Platte.....	U. P. R. R.....	2,808
Do..... Signal Station.....	U. S. Signal Office.....	2,841
Nuadilla.....	B. & M. R. R. R.....	1,086
Nursery.....	Smithsonian Ins.....	1,266
Oak Dale.....	S. C. & P. R. R.....	1,722
Odell.....	R. V. & B. & C. R. R.....	1,281
O'Fallon's.....	U. P. R. R.....	2,892
Ogallala.....	U. P. R. R.....	3,216
Omaha, high water Missouri River.....	Mean result from R. R. levels.....	967
Do low water Missouri River.....	Mean result from R. R. levels.....	966
Do passenger depot.....	Mean result from R. R. levels.....	1,039
Do Signal Station.....	U. S. Signal Office.....	1,113
Oreopolis.....	B. & M. R. R. R.....	974
Osceola.....	O. & R. V. R. R.....	1,642
Overton.....	U. P. R. R.....	2,326
Oxford.....	R. V. & B. & C. R. R.....	2,079
Palmyra.....	B. & M. R. R. R.....	1,151
Papillion.....	U. P. R. R.....	1,005
Parks.....	R. V. & B. & C. R. R.....	3,099
Pawnee.....	R. V. & B. & C. R. R.....	1,180
Peru.....	B. & M. R. R. R.....	903
Pilger.....	S. C. & P. R. R.....	1,423
Pioneer Grove.....	Smithsonian Inst.....	1,400
Platte Center.....	O. M. & B. & H. R. R.....	1,537
Plattsmouth.....	B. & M. R. R. R.....	983
Pleasant Dale.....	A. & N. R. R.....	1,311
Plum Creek.....	U. P. R. R.....	2,394
Potter.....	U. P. R. R.....	4,386
Preston.....	A. & N. R. R.....	885
Putnam.....	B. & M. R. R. R.....	1,378
Red Cloud.....	R. V. & B. & C. R. R.....	1,690
Republican.....	R. V. & B. & C. R. R.....	1,944

Station.	Authority.	Elevation.
		<i>Feet.</i>
Reveitar	R. V. & B. & C. R. R.	1,768
Reynolds	R. V. & B. & C. R. R.	1,389
Richland	Toner	1,350
Risings	O. & R. V. R. R.	1,537
Roca	A. & N. R. R.	1,219
Rock Bluffs	Smithsonian Inst	1,100
Rodgers	Toner	1,359
Ruby	A. & N. R. R.	1,425
Saint Edward	O. N. & B. H. R. R.	1,666
Salem	A. & N. R. R.	915
Saltillo	A. & N. R. R.	1,178
Schuyler	U. P. R. R.	1,356
Scribner	S. C. & P. R. R.	1,266
Seward	B. & M. R. R. R.	1,445
Shelton	U. P. R. R.	2,027
Sidney	U. P. R. R.	4,095
Silver Creek	U. P. R. R.	1,555
South Bend	B. & M. R. R. R.	1,051
Stanton	S. C. & P.	1,486
Staplehurst	A. & N. R. R.	1,482
Steele City	St. J. & D. C. R. R.	1,269
Sterling	A. & N. R. R.	1,185
Stratton	R. V. & B. & C. R. R. R.	2,800
Stromsburgh	O. & R. V. R. R.	1,636
Superior	R. V. & B. & C. R. R.	1,574
Sutton	B. & M. R. R. R.	1,689
Syracuse	B. & M. R. R. R.	1,056
Table Rock	A. & N. R. R.	1,028
Tamora	B. & M. R. R. R.	1,559
Tecumseh	B. & M. R. R. R.	1,113
Trenton	R. V. & B. & C. R. R.	2,690
Ulysses	A. & N. R. R.	1,524
Utica	B. & M. R. R. R.	1,589
Valley	U. P. R. R.	1,149
Valparaiso	O. & R. V. R. R.	1,316
Waco	B. & M. R. R. R.	1,627
Wahoo	O. & R. V. R. R.	1,183
Washington	Toner	1,025
Waverly	B. & M. R. R. R.	1,136
Weston	O. & R. V. R. R.	1,261
West Point	S. C. & P. R. R.	1,326
Wilber	B. & M. R. R. R.	1,339
Willow Island	U. F. R. R.	2,529
Wisner	S. C. & P. R. R.	1,393
Woodlawn	B. & M. R. R. R.	1,186
Wood River	U. P. R. R.	1,996
Wymore	B. & M. R. R. R.	1,232
York	B. & M. R. R. R.	1,642

NEVADA.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Agate Pass.....	Pacific R. R. Reports.....	7,615
Ahle's Ranch.....	Wheeler.....	5,990
Airy, Mount.....	Wheeler.....	6,787
Albion Peak.....	King.....	8,391
Allen's Springs.....	Wheeler.....	4,051
Alpha.....	E. & P. R. R.....	5,911
American Flat Peak.....	Wheeler.....	6,659
Anderson's Ranch.....	Wheeler.....	4,041
Antelope Spring.....	Wheeler.....	7,201
Do.....	Wheeler.....	6,445
Antelope Valley.....	Simpson.....	5,633
Antler Peak.....	King.....	8,433
Antoine's Ranch.....	Wheeler.....	6,517
Argenta.....	C. P. R. R.....	4,548
Aurora.....	Williamson.....	7,441
Austin.....	Wheeler.....	6,594
Do.....	Williamson.....	6,451
Bacon Mill Point.....	Wheeler.....	5,327
Baltimore Mine.....	Wheeler.....	5,729
Barkley Spring.....	Wheeler.....	5,906
Basalt Peak.....	Wheeler.....	6,599
Battle Mountain.....	C. P. R. R.....	4,511
Belmont.....	Wheeler.....	8,092
Beowawe.....	C. P. R. R.....	4,695
Bergin Head.....	Powell.....	7,570
Big Creek Pass.....	King.....	8,922
Bill Williams' Ranch.....		3,500
Birchins, Mount.....	Wheeler.....	10,345
Birchin's Ranch, Reese River Valley.....	Wheeler.....	5,743
Bishop.....	Toner.....	5,423
Black Rock Valley.....	Hayden.....	4,900
Bonneville, Mount.....	King.....	11,200
Bonpland, Mount.....	King.....	11,321
Brown Knob Peak.....	Wheeler.....	6,202
Brown's.....	C. & P. R. R.....	3,929
Buckeye Mine.....	Wheeler.....	5,221
Buckland's Ranch, Carson River Valley.....	Wheeler.....	4,151
Buell Valley.....	Simpson.....	6,000
Buffalo Peak.....	King.....	8,387
Buffalo Spring.....	Wheeler.....	4,076
Bullion City.....	Wheeler.....	6,396
Bull Run Mountain.....	Wheeler.....	9,040
Bunker Hill Peak.....	Wheeler.....	11,405
Bunker's Peak.....	Powell.....	6,750
Bunnellsburgh.....	Wheeler.....	4,278
Butterfield Spring.....	Wheeler.....	5,324
Callville.....	Wheeler.....	945
Campbell's Spring.....	Wheeler.....	7,366
Camp Rock.....	Wheeler.....	5,628
Cane Spring.....	Powell.....	2,050
Carico Peak.....	King.....	8,035
Carlin.....	Wheeler.....	4,849
Do.....	C. P. R. R.....	4,897
Carling Peak.....	King.....	7,754
Caroline Point.....	Powell.....	7,330
Carson City.....	C. P. R. R.....	4,630
Do.....	Wheeler.....	4,700

Station.	Authority.	Elevation.
		<i>Feet.</i>
Carson City, Friends' Observatory.....	Wheeler	4,660
Carson Hot Springs.....	Wheeler	4,592
Carson Lake.....	Wheeler	3,883
Do.....	Pacific R. R. Reports	3,840
Cave Valley.....	Wheeler	6,464
Cedar Mountains.....	King	6,500
Cedar Valley.....	Wheeler	7,073
Cerro Gordo Peak.....	Wheeler	9,432
Chalk Well.....	Wheeler	7,604
Chapman's Ranch.....	Wheeler	4,932
Charcoal Mountain.....	Powell	7,290
Charleston Peak.....	Petermann	10,874
Chataya Peak.....	King	7,766
Cherry Valley.....	Wheeler	7,473
Chinatown.....	Simpson	4,360
Chollar Potosi Mining Co's Office.....	Wheeler	6,242
Churchill Butte.....	Wheeler	6,009
Churchill, Fort.....	Med. Dept. U. S. A.....	4,284
Do.....	Williamson	4,319
Clark's.....	C. P. R. R.....	4,263
Clifton.....	.....	6,339
Clover Valley settlement.....	Powell	5,300
Do.....	Wheeler	4,902
Cluro.....	Toner	4,785
Cold Spring.....	Wheeler	6,173
Cold Springs.....	Wheeler	5,418
Cold Springs.....	Wheeler	4,200
Como Peak.....	Wheeler	9,017
Cortez Peak.....	King	8,363
Cory, Mount.....	Wheeler	11,326
Cottage, Camp.....	Wheeler	6,437
Cottonwood Spring.....	Wheeler	3,450
Cowles Peak.....	Wheeler	9,980
Cox's Station.....	Wheeler	4,379
Coyote.....	.....	2,440
Coyote Spring.....	Wheeler	3,674
Crescent.....	Wheeler	5,438
Crescent Mill.....	Wheeler	6,100
Crosman Valley.....	Simpson	4,814
Crosman's Spring.....	Wheeler	4,391
Crystal Spring.....	Wheeler	5,782
Cumberland.....	King	5,674
Curtis, Mount.....	Powell	9,000
Custer Springs, Steptoe Valley.....	King	5,843
Dalton Peak.....	King	9,232
Darby Mine.....	Wheeler	4,886
Davidson, Mount.....	Wheeler	7,941
Do.....	King	7,827
Davies, Mount.....	Wheeler	11,756
Dayton.....	Wheeler	4,369
Dead Horse Well.....	Wheeler	4,117
Deep Hollow Station.....	Wheeler	5,244
Deeth.....	C. P. R. R.....	5,340
Desatoya Peak.....	Wheeler	9,921
Desert Wells.....	Wheeler	4,693
Deyeringham's Ranch.....	Wheeler	6,497
Diamond.....	Eureka & P. R. R.....	5,941
Diamond Valley.....	King	5,560
Disappointment Spring.....	Wheeler	4,835
Division Peak.....	Wheeler	8,585
Dodge Valley.....	Simpson	5,486
Duck Valley.....	Wheeler	6,065
		} to 6,929

tion.	Authority.	Elevation.
		<i>Feet.</i>
.....	Wheeler	4,571
.....	Wheeler	6,037
.....	Simpson	4,587
ent	Powell	5,480
.....	Wheeler	5,291
.....	Wheeler	5,861
.....	Wheeler	7,546
.....	Powell	7,692
.....	Wheeler	6,123
.....	C. P. R. R.	5,063
.....	Wheeler	5,148
.....	Wheeler	6,871
.....	Wheeler	7,876
.....	Wheeler	8,509
.....	King	6,546
.....	Wheeler	6,439
.....	Wheeler	4,593
ne	Wheeler	5,268
.....	King	7,725
.....	King	7,548
.....	Wheeler	5,906
.....	Eureka & P. R. R.	6,371
.....	Wheeler	5,978
.....	Wheeler	8,412
.....	King	8,199
.....	Wheeler	4,745
.....	Wheeler	6,866
.....	King	8,028
.....	Pacific R. R. Reports	6,200
.....	Pacific R. R. Reports	6,248
.....	Wheeler	5,054
.....	Wheeler	10,779
.....	Wheeler	5,650
.....	Petermann	6,200
.....	Wheeler	4,154
.....	King	10,994
.....	Wheeler	11,077
.....	Simpson	4,624
.....	Wheeler	4,801
.....	Wheeler	4,352
Succor Mine.	Wheeler	5,452
.....	Powell	11,000
.....	Wheeler	6,282
.....	Wheeler	4,453
.....	King	11,237
.....	Wheeler	6,374
.....	C. P. R. R.	4,385
.....	Pacific R. R. Reports	5,952
.....	U. P. R. R. surveys	6,065
.....	King	10,491
.....	Wheeler	10,964
.....	King	8,307
.....	Wheeler	8,990
.....	Wheeler	9,965
.....	Powell	1,930
.....	Hayden	4,300
.....	Wheeler	4,187
.....	Hayden	5,600
.....	Pacific R. R. Reports	5,368
.....		} to 6,139
.....	Powell	2,620
.....	King	11,296
.....	Wheeler	5,006
.....	C. P. R. R.	5,220

Station.	Authority.	Elev
Halleck Camp	King	
Do. do	Smithsonian Inst	
Do. do	Wheeler	
Hamilton	Wheeler	
Hastings Pass	U. P. R. R. surveys	
Do	Simpson	
Hawthorne	Carson & Colorado R. R.	
Hay Ranch	Eureka & P. R. R.	
Hiko	Wheeler	
Hill and Gaines Ranch	Wheeler	
Homer	Wheeler	
Home Station	Wheeler	
Honey Lake		
Hot Springs	C. P. R. R.	
Do	Wheeler	
Hot Springs Peak	Wheeler	
Hot Springs, Walker's River		
Houston's Wells	Wheeler	
Humboldt	C. P. R. R.	
Humboldt River Basin		
Huntington Valley	Wheeler	{ t
Independence	C. P. R. R.	
Indian Agency, Walker River	Wheeler	
Indian Pass	King	
Indian Spring	Wheeler	
Inyo Peak	King	
Iose	Wheeler	
Iron Point	C. P. R. R.	
Ivanpah	Wheeler	
Ives Pass	King	
Janesville	Wheeler	
Jones' Mills Ranch	Wheeler	
Kanan's Ranch	Powell	
Kate, Mount	King	
Kingston		
King's Valley	Hayden	
Knickerbocker Mine	Wheeler	
Kobeh Valley	Simpson	{ t
Ladrones, Mount	Wheeler	
Lassen's Meadows	Pacific R. R. Reports	
Las Vegas	Wheeler	
Do	Wheeler	
Lee's Mill, Mason Valley	Wheeler	
Locust Spring	Wheeler	
Lodi	Wheeler	
Lodi Peak	Wheeler	
Long Valley	Wheeler	
Do	Simpson	
Lovelocks	C. P. R. R.	
Lyon, Mount	Wheeler	
Lyonsville	Wheeler	
McCabe's Pass	U. P. R. R. Surveys	
McClellan Mountain	Wheeler	
McClellan's Cove	Wheeler	
McDermott, Camp	Med. Dept., U. S. A.	
McGarry, Camp	Med. Dept., U. S. A.	
McKenney's, on Lake Tahoe	Wheeler	
McKinney's Pass	King	
McMahon's Ranch, Reese River Valley	Wheeler	
Maggie Peak	King	
Mahogany, Mount	Wheeler	
Mahogany Peak	King	

Station.	Authority.	Elevation.
		<i>Feet.</i>
ango, Mount	Wheeler	10,086
ett's Ranch	Wheeler	8,074
n's Ranch	Wheeler	4,348
ango Peak	Wheeler	8,845
ow Valley	Powell	4,400
ity	C. P. R. R.	{ to 4,800
's Spring	Powell	4,226
rd	Wheeler	6,220
al	Wheeler	4,204
al Pass	Enreka & P. R. R.	5,443
n	Wheeler	0,969
Cristo Mill	C. P. R. R.	4,982
llo	Wheeler	7,696
ment Hill	C. P. R. R.	5,010
Campbell's Ranch	Wheeler	6,734
Mount	C. P. R. R.	0,166
tain Spring	Wheeler	6,267
Lake	Wheeler	7,384
Lakes Valley	Wheeler	9,723
o	Pacific R. R. Reports	5,501
Meadows	King	4,079
Spring	Pacific R. R. Reports	3,862
e's Peak	{ to 4,000	4,000
a's Station	Wheeler	4,318
la City	Wheeler	4,900
on's Ranch, near Honey Lake	King	9,046
Granite Peak	Wheeler	4,245
Pass	Toner	6,205
ental Mills, Virginia City	Wheeler	4,079
, Mount	Wheeler	8,363
entuck Ranch, Sutro Tunnel Road	C. P. R. R. Surveys	5,964
l's Ranch	Wheeler	5,480
Water Tank	Wheeler	7,974
a	Wheeler	5,684
oy Peak	Wheeler	5,581
Mount	Wheeler	6,509
ee	C. P. R. R.	4,181
d Peak	King	8,388
on	Wheeler	10,023
hinn-pah-ghun Spring	Wheeler	5,100
magut Lake	Wheeler	5,392
umpe Valley	King	7,556
Its Peak	Powell	1,360
de, junction with Eureka and Palisade	Wheeler	2,282
R.	Wheeler	3,400
eca	Simpson	5,700
co	{ to 6,000	6,000
eca Head	Wheeler	8,618
lise Peak	C. P. R. R.	4,821
lise Valley	Powell	4,770
Peak	Wheeler	4,718
rson's Ranch	Powell	7,450
ne Mount	Wheeler	8,662
ne Peak	Hayden	4,500
ne Ranch	Wheeler	8,683
nal, Mount	Wheeler	5,213
	King	6,217
	Wheeler	8,275
	Wheeler	4,952
	Wheeler	7,580
	C. P. R. R.	5,204
	Wheeler	5,180

Station.	Authority.	Elevation.
		<i>Feet.</i>
Peko Peak	King	6,620
Pennoyer Spring	Wheeler	6,632
Pequot	C. P. R. R.	6,184
Pequot Pass	U. P. R. R. Surveys	6,143
Do	C. P. R. R. Surveys	6,180
Peterson's Ranch	Wheeler	6,137
Petona Mine	Wheeler	6,639
Phelps Valley	Simpson	6,150
Piermont	Wheeler	5,581
Pilot Knob	Wheeler	10,758
Piñon Pass	King	6,533
Pinto, Mount	Wheeler	8,618
Do	King	8,715
Pinto Spring	Wheeler	5,683
Pioche	Wheeler	5,942
Do	Powell	6,100
Do.. Signal Station	U. S. Signal Office	6,220
Placer, Mount	Wheeler	8,965
Point of Rocks Peak	King	9,610
Poston, Mount	Wheeler	11,977
Proctor's Ranch, Truckee River	Wheeler	3,963
Prometheus Mountain	King	8,256
Do	Wheeler	8,151
Pueblo Valley	Hayden	5,000
Pyramid Lake	Pacific Railroad Reports	4,890
Pyramid Lake Indian Agency	Wheeler	3,980
Quartz Mountain	Wheeler	8,700
Quinn's River Valley	Hayden	4,850
Quinn Cañon	Wheeler	6,256
Quinn's River Valley	Hayden	4,850
Rabbit Hole Spring	King	4,374
Ragtown	King	4,039
Do	Wheeler	4,002
Railroad Peak	King	8,569
Do	Wheeler	5,436
Ramsell City	Wheeler	5,324
Raspberry	C. P. R. R.	4,327
Rattlesnake Hill	Wheeler	6,616
Rattlesnake Spring	Wheeler	6,038
Raven's Nest Peak	King	8,393
Raw Mountain	Wheeler	8,404
Red Dome Pass	U. P. R. R. Surveys	4,720
Do	C. P. R. R. Surveys	4,821
Reese River Valley	Simpson	5,600
Reno	Wheeler	4,484
Do.. Junction Virginia City and Truckee R. R.	C. P. R. R.	4,497
Robert's Peak	King	10,132
Rock Island Mine	Wheeler	5,678
Rose Creek	C. P. R. R.	4,322
Rose Mountain	King	7,949
Rose Mountain	King	6,448
Rose Mountain	Wheeler	10,820
Rose Valley	Wheeler	5,401
Rose Valley Settlement	Powell	5,450
Ruby, Camp	Wheeler	6,153
Do	Medical Department, U. S. A.	5,922
Ruby Valley	Simpson	6,000
Rye Patch	C. P. R. R.	4,257
Sacramento	Wheeler	6,575
Saint Clair	Wheeler	3,989
Saint Joseph	Powell	1,490
Saint Thomas	Powell	1,180

ation.	Authority.	Elevation.
		<i>Feet.</i>
	Wheeler	1,600
	Hayden	4,200
	Wheeler	5,281
	Wheeler	3,928
		8,075
	King	10,942
	Wheeler	264
	Wheeler	6,186
	Wheeler	6,865
	Wheeler	4,028
	U. P. R. R. Surveys	6,355
	Wheeler	6,220
	King	9,545
	Wheeler	4,439
Reno	Wheeler	11,200
highest peak)	Wheeler	8,000
mean height)		4,445
	C. P. R. R.	4,636
	King	9,760
	King	5,796
	King	9,387
	Wheeler	6,014
dry	Wheeler	4,940
	Wheeler	4,257
		5,000
	Wheeler	7,511
		4,570
	King	7,463
	Wheeler	7,402
	Wheeler	4,469
	Wheeler	6,102
	King	6,251
g.	Wheeler	7,768
	King	11,041
	Toner	7,500
	King	9,925
	Wheeler	7,115
	Wheeler	4,595
	Wheeler	5,730
	Simpson	5,800
		} to 6,200
	Wheeler	6,818
	C. P. R. R.	4,422
	Wheeler	6,390
	Powell	695
	Wheeler	1,108
	King	6,650
	Wheeler	4,749
	King	8,477
n	King	6,164
	Wheeler	3,972
k.	Powell	7,010
	Powell	6,327
ne	Wheeler	6,415
	Wheeler	4,218
	Wheeler	5,366
	King	8,751
	Wheeler	8,772
	Wheeler	4,720
	Wheeler	7,254
	C. P. R. R.	4,812
	Wheeler	10,938
	King	9,240
alley	Hayden	5,950

Station.	Authority.	Elevation.
		<i>Feet.</i>
Ti-ba-ba Springs.....	Wheeler.....	6,248
Tibbie Mountain.....	Wheeler.....	7,383
Timpahute Mountain.....	Wheeler.....	8,600
Timpahute Spring.....	Wheeler.....	6,892
Tinnah-nah Springs.....	Wheeler.....	4,080
Tissapook Spring.....	Wheeler.....	5,832
Titilla.....	Wheeler.....	7,060
Toano.....	C. P. R. R.....	5,973
Todhunter's Camp, Long Valley.....	Wheeler.....	5,779
To-ha-cum Peak.....	Wheeler.....	8,174
Toyabe Peak.....	Wheeler.....	10,144
Trinity Peak.....	King.....	7,500
Trojan Mine.....	Wheeler.....	6,086
Truckee Valley.....	Hayden.....	4,000
Tulasco.....		{ to 5,100
Tule Spring.....		5,418
Tutib, Mount.....	Wheeler.....	2,366
Twin Lakes.....	Wheeler.....	7,032
Uiyabi Pass.....	P. R. R. Reports.....	7,843
Ungweah Mountains.....	Simpson.....	6,233
Union.....	Toner.....	{ to 7,500
Upper Caledonia Mine.....	Wheeler.....	6,160
Utah Mine.....	Wheeler.....	6,987
Vaughan's Ranch.....	Wheeler.....	5,996
Verdi.....	C. P. R. R.....	5,316
Virginia City.....	C. P. R. R.....	4,895
Do.....	Toner.....	6,205
Do.....astronomical monument.....	Wheeler.....	6,200
Do.....office Chollar Potosi Mine.....	Wheeler.....	6,339
Do.....165 G street.....	Wheeler.....	6,242
Virgin Valley (lower).....	Powell.....	6,118
Vista.....	Toner.....	{ to 700
Vivian Mine.....	Wheeler.....	to 2,000
Wasworth.....	C. P. R. R.....	4,400
Do.....	Wheeler.....	5,415
Wah-ya-bah Springs.....	Wheeler.....	4,077
Walker's Lake.....	Pacific R. R. Reports.....	4,095
Do.....	Carson and Colorado R. R.....	5,184
Walker's Ranch.....	Wheeler.....	3,840
Walker's River Basin.....		4,147
Walker's River Meadows.....		5,146
Wallace's Ranch.....	Wheeler.....	4,100
Wall Spring.....	Wheeler.....	6,500
Wanahonupe Valley.....	Simpson.....	5,787
Washington.....	Wheeler.....	3,912
Washoe City.....	Wheeler.....	5,543
Washoe Lake.....	Wheeler.....	6,992
Washoe Valley.....	Hayden.....	5,021
Water Cañon.....		5,046
Wauguyhi Peak.....	King.....	4,000
Weahbah Range.....	Simpson.....	2,140
Welche's Ranch.....	Wheeler.....	8,528
Welch's Station.....	Wheeler.....	{ to 7,000
Wells.....	C. P. R. R.....	to 8,000
West Belcher Mine.....	Wheeler.....	5,771
West Gate.....	Wheeler.....	5,236
West Point.....	Wheeler.....	5,629
Wheeler Peak.....	Wheeler.....	6,098
Do.....timber line on.....		4,504
White Bluff Spring.....	Wheeler.....	1,755
		13,036
		11,500
		5,020

Station.	Authority.	Elevation.
		<i>Page.</i>
Pass	Wheeler	5,860
.....	Wheeler	6,326
.....	Wheeler	6,000
.....	C. P. R. R.	3,594
.....	Wheeler	4,818
.....	Wheeler	5,396
e	Wheeler	5,236
.....	.....	5,859
.....	C. P. R. R.	4,332
l Office	U. S. Signal Office	4,327
.....	Wheeler	3,825
.....	King	6,869
.....	Wheeler	5,145
.....	Simpson	6,000
ramid Lake	Wheeler	3,861
.....	Wheeler	8,400

NEW HAMPSHIRE.

Station.	Authority.	Elevation.
		<i>Fert.</i>
Adam's Mountain	Appalachian Club	5,776
Do.....Sam Adams' Peak	Appalachian Club	5,554
Do.....J. Q. Adams' Peak	Appalachian Club	5,384
Do.....Nowell's Peak	Appalachian Club	5,313
Alton Bay Hotel	Suncook Valley R. R.	530
Ammonoosuc Station, base of Mount Washington	Bost., Con. & Mont. R. R.	2,668
Andover	Northern R. R.	628
Ashuelot	Ashuelot R. R.	434
Atkinson	Boston & Maine R. R.	57
Bald Mountain, Franconia Notch	Appalachian Club	2,310
Barnstead Centre	Suncook Valley R. R.	527
Bath	Bost., Con. & Mont. R. R.	521
Belknap Mountain, lower peak of the Twins	Appalachian Club	2,259
Bemis Station, Hart's location	Port. & Ogden R. R.	906
Berlin Falls	Grand Trunk R. R.	1,016
Bethlehem	Bost. Con. & Mont. R. R.	1,187
Do.....Sinclair House	Appalachian Club	1,459
Do.....Maplewood House	Appalachian Club	1,489
Black Mountain, Sandwich Dome, highest peak	Appalachian Club	4,071
Do.....Jennings Peak	Appalachian Club	3,587
Do.....Sachem Peak, higher	Appalachian Club	3,050
Do..... lower	Appalachian Club	2,967
Do.....Middle Acteon Peak	Appalachian Club	2,545
Do.....Bald Knob	Appalachian Club	2,391
Blue Mountain	Guyot	4,370
Boot's Spur	Appalachian Club	5,524
Boscawen	Northern R. R.	274
Boy Mountain, near Jefferson	Appalachian Club	2,278
Bradford	Concord & Claremont R. R. ..	679
Bray Hill, Whitefield	Appalachian Club	1,637
Brick House	Guyot	3,850
Campton, Black Mountain House	Appalachian Club	687
Do...Chase's Hillside House	Appalachian Club	645
Campton Hollow P. O. (approx.)	Appalachian Club	707
Canaan	Northern R. R.	956
Candia	Concord & Portsmouth R. R. ..	445
Cannon Mountain	Guyot	3,850
Carrigain	Guyot	4,678
Carr's Mountain	Guyot	3,480
Carter Mountain	Guyot	4,830
Chapin's Switch	Sullivan Co. R. R.	328
Charlestown	Sullivan Co. R. R.	376
Cherry Mountain	Guyot	3,670
Chichester	Suncook Valley R. R.	373
Chicomna	Guyot	3,540
Claremont	Concord & Claremont R. R. ..	543
Claremont Junction	Concord & Claremont R. R. ..	473
Clay, Mount	Guyot	5,553
Clinton, Mount	Appalachian Club	4,311
Do..... Timber line on	Guyot	4,320
Concord	Guyot	4,250
Concord	Concord & Claremont R. R. ..	252
Connecticut River Bridge, near Bellow's Falls	Sullivan Co. R. R.	304
Connecticut River Bridge, near Windsor	Sullivan Co. R. R.	351

Station.	Authority.	Elevation.
		<i>Feet.</i>
Contoocook	Contoocook Valley R. R.	373
Conway Centre Station	Port. & Ogden R. R.	455
Conway Corner (Chateaugay), west end of village	P., G. F. & C. R. R.	466
Cooke's Hill, West Campton	Appalachian Club	2,236
Crawford House Station, summit	Port. & Ogden R. R.	1,903
Crawford Mountain	Guyot	3,134
Dalton	Bost., Con. & Mont. R. R.	866
Danbury	Northern R. R.	826
Deception, Mount	Guyot	2,449
Derry	Manch. & Lawrence R. R.	238
Dimond's Corner	Concord & Claremont R. R. ..	425
Dover	Boston & Maine R. R.	72
Durham	Boston & Maine R. R.	70
Eagle Cliff	Guyot	3,446
Eagle Head	Guyot	4,216
East Andover	Northern R. R.	661
East Concord	Geol. S'vy of N. H.	246
East Haverhill	Bost., Con. & Mont. R. R.	773
East Jaffrey	Monadnock & Petersboro R. R.	1,032
East Kingston	Boston & Maine R. R.	130
East Lebanon	Northern R. R.	766
East Rindge	Monadnock & Petersboro T. R.	1,003
East Wakefield	P., G. F. & C. R. R.	678
East Westmoreland	Cheshire R. R.	709
East Wilton	Nashua, Wilton & Petersbor- ough R. R.	328
Echo Lake	Guyot	1,926
Do	Appalachian Club	1,929
Echo Mountain	Guyot	3,170
Elkin's Fisher, Tecumseh Group	Appalachian Club	2,621
Elliot	P., G. F. & C. R. R.	21
Enfield	Northern R. R.	768
Epping	Concord & Portsmouth R. R. ..	154
Epsom	Geol. Survey of N. H.	342
Do	Suncook Valley R. R.	362
Do M. M. Steele's residence	Appalachian Club	781
Exeter	Boston & Maine R. R.	58
Fabyan House	Bost., Con. & Mont. R. R.	1,571
Fisher Mountain, Tecumseh Group	Appalachian Club	3,470
Fitzwillian	Cheshire R. R.	1,063
Fort Mountain, Epsom	Appalachian Club	1,431
Franconia, Franconia House	Appalachian Club	1,054
Do Lafayette House	Appalachian Club	990
Franklin	Northern R. R.	363
Franklin, Mount	Appalachian Club	4,917
Do	Guyot	4,904
Gilford, Locke's Farm-house	Appalachian Club	643
Gilmanton Hill	Guyot	1,329
Gilmanton, Iron Works Village	Suncook Valley R. R.	647
Glen Station	Port. & Ogden R. R.	530
Goffstown Station	Manch. & N. Weare R. R.	304
Gorham	Grand Trunk R. R.	794
Grafton	Northern R. R.	848
Grafton Centre	Northern R. R.	872
Great Falls	Boston & Maine R. R.	178
Do (Conway) Junction	P., G. F. & C. R. R.	90
Greenfield	Petersborough R. R.	800
Green Mountain, Tecumseh Group	Appalachian Club	3,547
Green's Cliff	Guyot	1,329
Groveton	Grand Trunk R. R.	884
Groveton Junction	Bost., Con. & Mont. R. R.	901
Gunstock Mountain	Appalachian Club	2,400
Hampstead Station	Nashua & Rochester R. R.	258

Station.	Authority.	Elevation.
		<i>Feet.</i>
Harrisville.....	Manch. & N. Weare R. R.....	1,334
Haverhill Depot.....	Conn. & Pass. R. R.....	412
Henniker.....	Contoocook Valley R. R.....	439
Hillsborough Bridge Station.....	Contoocook Valley R. R.....	574
Hollis.....	Worcester & Nashua R. R.....	195
Jefferson, Mount Adams House.....	.....	1,648
Do...Starr King House.....	Appalachian Club.....	1,437
Jefferson, Mount.....	Guyot.....	5,714
Kearsarge Mt.....	Eastman.....	2,726
Keene.....	Ashuelot R. R.....	466
Kendall's Crossing.....	Sullivan Co. R. R.....	303
Kinsman Mountain.....	Guyot.....	4,200
Do.....highest summit seen from Lafayette.....	Appalachian Club.....	4,370
Kittery.....	P., G. F. & C. R. R.....	17
Lafayette, Mount.....	Appalachian Club.....	5,249
Do.....	Guyot.....	5,290
Do.....lower north peak.....	.....	5,081
Do.....Eagle Lakes.....	.....	4,146
Do.....Eagle Cliff Notch.....	.....	2,990
Lake of the Clouds.....	Guyot.....	5,009
Do.....	Appalachian Club.....	5,053
Lancaster.....	Bost., Con. & Mont. R. R.....	870
Lebanon.....	Northern R. R.....	510
Lincoln Mountain.....	Appalachian Club.....	5,098
Lisbon.....	Bost., Con. & Mont. R. R.....	577
Littlefield's Crossing.....	Concord & Portsmouth R. R.....	126
Little Monroe Mountain.....	Guyot.....	5,204
Do.....	Appalachian Club.....	5,220
Littleton.....	Bost., Con. & Mont. R. R.....	817
Do...Oak Hill House.....	Appalachian Club.....	975
Lyndeborough.....	Petersborough R. R.....	624
Madbury.....	Boston & Maine R. R.....	108
Madison, Mount.....	Appalachian Club.....	5,336
Do.....	Geol. Surv'y of N. H.....	5,365
Madison, N. W. end of 6-mile pond.....	P., G., F. & C. R. R.....	476
Mad River Peak.....	Guyot.....	4,397
Manchester.....	Manch. & Lawrence R. R.....	181
Marlborough.....	Cheshire R. R.....	789
Mast Yard.....	Concord & Claremont R. R.....	375
Meredith Village.....	Bost., Con. & Mont. R. R.....	542
Middle Fisher Mountain, Tecumseh Group.....	Appalachian Club.....	2,790
Milan.....	Grand Trunk R. R.....	1,060
Milton Station.....	P., G., F. & C. R. R.....	415
Monadnock, Mount.....	Guyot.....	3,718
Monroe, Mount.....	Appalachian Club.....	5,361
Moose hillock.....	Guyot.....	4,790
Morijab, Mount.....	Guyot.....	4,653
Mount Sunapee Station.....	Concord & Claremont R. R.....	1,128
Nashua.....	Boston, Lowell & Nashua R. R.....	135
Do. Main street.....	Nashua, Acton & Boston R. R.....	31
Do. Concord depot.....	Worcester & Nashua R. R.....	120
Do. Lake street.....	Nashua, Acton & Boston R. R.....	45
Newbury Summit, on rail.....	Concord & Claremont R. R.....	1,130
Do.....(rock cut) over rail.....	Concord & Claremont R. R.....	1,181
Newmarket.....	Boston & Maine R. R.....	40
Newmarket Junction.....	Concord & Portsmouth R. R.....	52
Newport.....	Concord & Claremont R. R.....	802
Newton.....	Boston & Maine R. R.....	123
Do. R. R. Summit.....	Boston & Maine R. R.....	142
North Boscaawen.....	Northern R. R.....	990
North Charlestown.....	Sullivan Co. R. R.....	417
North Conway Station.....	P., G. F. & C. R. R.....	516
Do.....(village plains).....	Port. & Ogden R. R.....	521

Location.	Authority.	Elevation.
		<i>Feet.</i>
.....	Bost., Con. & Mont. R. R.	667
.....	Grand Trunk R. R.	902
.....	Manch. & N. Weare R. R.	489
.....	Appalachian Club	4,417
.....	P., G. F. & C. R. R.	642
.....	Appalachian Club	2,774
.....	Appalachian Club	2,950
.....	Guyot	2,950
.....	Appal. Club	3,302
.....	Manch. & N. Weare R. R.	319
.....	Guyot	4,420
.....	Monadnock & Petersboro R. R.	744
.....	Appalachian Club	2,063
.....	Suncook Valley R. R.	493
.....	Boston & Maine R. R.	92
.....	Boston & Maine E. R.	86
.....	Guyot	4,764
.....	Appalachian Club	4,771
.....	Appalachian Club	1,896
.....	Bost., Con. & Mont. R. R.	473
.....	Appalachian Club	1,747
.....	Appalachian Club	4,114
.....	Appalachian Club	2,062
.....	Concord & Portsmouth R. R..	198
.....	Nashua & Rochester R. R.	226
.....	Boston & Maine R. R.	115
.....	Appalachian Club	1,235
.....	Bost., Con. & Mont. R. R.	520
.....	Petersborough R. R.	820
.....	Boston & Maine R. R.	107
.....	Guyot	3,969
.....	Appalachian Club	1,754
.....	Appalachian Club	3,824
.....	Port. & Ogden R. R.	860
.....	Grand Trunk R. R.	704
.....	Petermann	1,636
.....	Sullivan Co. R. R.	303
.....	Northern R. R.	732
.....	Cheshire R. R.	560
.....	Bost., Con. & Mont. R. R.	867
.....	Boston & Maine R. R.	38
.....	Sullivan Co. R. R.	374
.....	Grand Trunk R. R.	954
.....	Appalachian Club	4,890
.....	Appalachian Club	3,943
.....	Appalachian Club	3,376
.....	Grand Trunk R. R.	863
.....	Survey Signal	1,781
.....	Appalachian Club	1,334
.....	.....	1,351
.....	Concord & Claremont R. R..	956
.....	Appalachian Club	1,035
.....	Ashuelot R. R.	473
.....	Guyot	3,305
.....	Appalachian Club	1,406
.....	.....	4,105
.....	.....	3,578
.....	Guyot	3,393
.....	Cheshire R. R.	1,002
.....	Guyot	4,930
.....	Bost., Con. & Mont. R. R.	1,375
.....	Port. & Ogden R. R.	660
.....	P., G. F. & C. R. R.	690

Station.	Authority.	Elevation.
Wallace Hill, Bethlehem.....	Appalachian Club.....	2,124
Walpole.....	Cheshire R. R.....	217
Warner.....	Concord & Claremont R. R.....	421
Warren.....	Bost., Con. & Mont. R. R.....	726
Washington, Mount.....	Guyot.....	6,222
Do.....	Appalachian Club.....	6,225
Do.....	Bost., Con. & Mont. R. R.....	6,220
Do..... Nelson's crag.....	Appalachian Club.....	5,615
Do..... Lion's Head.....	Appalachian Club.....	5,016
Do..... top south wall Hunt- ington's ravine.....	Appalachian Club.....	5,432
Do..... Signal Station.....	U. S. Signal Office.....	6,226
Do..... Timber line on.....	Bost., Con. & Mont. R. R.....	4,150
Waterville.....	Appalachian Club.....	1,536
Weetamoo Mountain, Campton.....	Appalachian Club.....	2,540
Welch Mountain, lower peak.....	Appalachian Club.....	2,637
Do..... higher peak or "Dicky Mountain".....	Appalachian Club.....	2,788
West Andover.....	Northern R. R.....	677
West Campton, Blair's Hotel.....	Appalachian Club.....	556
Do..... Sanborn's Hotel.....	Appalachian Club.....	571
Do..... post-office.....	Appalachian Club.....	623
Do..... Rising Sun Church.....	Appalachian Club.....	1,103
West Canaan.....	Northern R. R.....	813
West Claremont.....	Sullivan Co. R. R.....	406
West Concord.....	Concord & Claremont R. R.....	354
West Hopkinton.....	Contoocook Valley R. R.....	392
West Lebanon.....	Northern R. R.....	376
West Milan.....	Grand Trunk R. R.....	926
Westmoreland.....	Cheshire R. R.....	512
West Ossipee.....	P., G. F. & C. R. R.....	422
Westport.....	Ashuelot R. R.....	470
Whiteface.....	Guyot.....	4,030
Whitefield.....	Bost., Con. & Mont. R. R.....	931
Do..... Dodge's Mountain View House (approx.).....	Appalachian Club.....	1,279
Do..... Fiske's Cherry Mountain House.....	Appalachian Club.....	1,249
White Mountain House.....	Bost., Con. & Mont. R. R.....	1,556
Wild Cat Mountain.....	Guyot.....	4,350
Willey House Station.....	Port. & Ogden R. R.....	1,608
Willey, Mount.....	Guyot.....	4,300
Wilton.....	Petersborough R. R.....	322
Winchendon Village, crossing Cheshire Rail- road.....	Monadnock & Petersboro R. R.....	992
Winchester.....	Ashuelot R. R.....	448
Windham.....	Mauch. & Lawrence R. R.....	324
Windsor Railroad Bridge (center).....	Sullivan Co. R. R.....	352
Winnipiseogee Lake.....	Suncook Valley R. R.....	500
Do..... Lake survey, October, 1871.....	P., G. F. & C. R. R.....	501
Do..... March 26, 1872.....	P., G. F. & C. R. R.....	498
Wolfborough Junction, 50 miles from Ports- mouth.....	P., G. F. & C. R. R.....	574
Woodstock, Isaac Fox's boarding house.....	Appalachian Club.....	742
Woodsville.....	Bost., Con. & Mont. R. R.....	448

NEW JERSEY.

Station.	Authority.	Elevation.
		<i>Feet.</i>
le	N. Y., L. E. & W. R. R	270
Pond	N. J. Geol. Survey	897
in passenger house on wharf	Camden & A. R. R	12
r, depot	Sussex R. R	636
City, Signal Station	N. J. C. R. R	438
.....	U. S. Signal Office	13
le	Sussex R. R	489
oro	N. Y., L. E. & W. R. R	95
Ridge	W. J. R. R	64
Hill	P. & D. R. R	379
le	U. S. C. & G. S	373
re	N. Y., L. E. & W. R. R	26
.....	Phil. & T. R. R	271
.....	Newton & Belvidere R. R	286
Junction	N. Y., L. E. & W. R. R	4
Neck	U. S. C. & G. S	223
y Heights	P. & D. R. R	230
sville	P. & D. R. R	372
eld	Newark & Bloomfield R. R	127
oury	N. J. C. R. R	334
ountain, summit on State line	N. J. Geol. Survey	1,527
Branch Junction	Morris & Essex R. R	413
Crossing Junction	Morris & Essex R. R	41
(Sheep's Hill, U. S. C. & G. S. Sta- tion)	Morris & Essex R. R	554
own, mean tide in Delaware River	N. J. Geol. Survey	943
Brook	Del. & Raritan Canal	1
ville Hotel	N. J. C. R. R	36
Hill Summit	N. J. Geol. Survey	582
on	N. J. C. R. R	365
ay	W. J. R. R	51
land, head of	Morris & Essex R. R	377
low water in Delaware River	Phil. & T. R. R	97
i, Court-House	Phil. & T. R. R	74
.....	U. S. C. & G. S	30
ay, Signal Station	W. J. R. R	6
erville	U. S. Signal Office	27
ille	Phil. & T. R. R	178
m	N. Y., L. E. & W. R. R	132
.....	Morris & Essex R. R	233
U. S. C. & G. S. Station	C. R. R	686
Junction	N. J. Geol. Survey	790
.....	Morris & Essex R. R	691
ton, Jaggert's house	M. & G. R. R	123
.....	U. S. C. & G. S	76
.....	N. Y., L. E. & W. R. R	56
.....	N. J. C. R. R	349
.....	Morris & Essex R. R	281
own	U. S. C. & G. S	99
Hill	F. R. R	159
ry Reservoir (water)	Sussex R. R	772
(summit)	Sussex R. R	780
fountain, U. S. C. & G. S. Station	U. S. C. & G. S	665
d	N. J. C. R. R	72
Lake	W. J. R. R	2
Gap, 1st summit	N. J. Geol. Survey	896
2d summit	N. J. Geol. Survey	931
observatory	N. J. Geol. Survey	1,319

Station.	Authority.	Elevation.
Culver's Pond	N. J. Geol. Survey	
Denville	Morris & Essex R. R.	
Disboro	U. S. C. & G. S.	
Dover	U. S. C. & G. S.	
Drake's Pond	N. J. Geol. Survey	
Drakesville	Morris & Essex R. R.	
East Freehold	F. & N. Y. R. R.	
East Newark	N. Y., L. E. & W. R. R.	
Easton	N. J. C. R. R.	
Elizabeth	N. J. C. R. R.	
Essex	N. Y., L. E. & W. R. R.	
Finley Station	W. J. R. R.	
Flagtown	N. J. C. R. R.	
Flemington	F. R. R.	
Do	junction with Bel. & Del. R. R.	
Do	Station, track	
Do	crossing	
Franklin	N. Y., L. E. & W. R. R.	
Franklin Furnace Pond	N. J. Geol. Survey	
Franklinville	M. & G. R. R.	
Freehold	F. & N. Y. R. R.	
Freehold Junction	F. & N. Y. R. R.	
Frenchtown	Phil. & T. R. R.	
Glassborough	M. & G. R. R.	
Gloucester	W. J. R. R.	
Do	Buena Vista Hotel	
Hacketts town	Morris & Essex R. R.	
Haddonfield	Camden & Amboy R. R.	
Do	U. S. C. & G. S.	
Hanan's Pond	W. J. R. R.	
Hardings	W. J. R. R.	
Hartford, Rodgers house	U. S. C. & G. S.	
Hasteds	W. J. R. R.	
Hawthorne	N. Y., L. E. & W. R. R.	
High Bridge	N. J. C. R. R.	
High Knob	N. J. Geol. Survey	
Do	Pond	
Hightstown	Camden & Amboy R. R.	
Hillsdale	F. & N. Y. R. R.	
Hoboken	Morris & Essex R. R.	
Hohokus	N. Y., L. E. & W. R. R.	
Holmdel Cross-Roads	U. S. C. & G. S.	
Hopating Lake	Toner	
Hope	Newton & Belvidere R. R.	
Hornerstown	U. S. C. & G. S.	
Horton's	C. R. R.	
Howell P. O.	Newton & Belvidere R. R.	
Ironia	C. R. R.	
Jamesburg	Camden & Amboy R. R.	
Do	Junction	
Jersey City	N. Y., L. E. & W. R. R.	
Johnsburg	Newton & Belvidere R. R.	
Keyport, Morris house	U. S. C. & G. S.	
Do	Broad street	
Do	First street	
Kingsland	F. N. & N. Y. R. R.	
Kingston (Lock)	Morris & Essex R. R.	
Do	intersec. R. H. R. & Old C. & A. Br.	
Lafayette, grade line in	Del. & Raritan Canal	
Lake View	Camden & Amboy R. R.	
Lambertville	Sussex R. R.	
Do	N. Y., L. E. & W. R. R.	
Do	lock	
Do	lock	
Lebanon	Phil. & T. R. R.	
	Del. & Raritan Canal	
	Del. & Raritan Canal	
	N. J. C. R. R.	

Station.	Authority.	Elevation.
		<i>Fect.</i>
Lewistown.....	U. S. C. & G. S.....	85
Libertyville.....	N. J. Geol. Survey.....	710
Lincoln Park.....	Morris & Essex R. R.....	176
Little Swartwart Pond.....	N. J. Geol. Survey.....	479
Long Pond.....	N. J. Geol. Survey.....	862
McAfee.....	W. V. R. R.....	419
McCainsville.....	C. R. R.....	713
Madison.....	Morris & Essex R. R.....	247
Mahwah.....	N. Y., L. E. & W. R. R.....	310
Malaga.....	M. & G. R. R.....	106
Malford.....	N. J. C. R. R.....	76
Malford's Pond.....	N. J. Geol. Survey.....	602
Mantua.....	W. J. R. R.....	36
Marlboro.....	F. & N. Y. R. R.....	156
Do.....	W. J. R. R.....	120
Martin's Creek.....	Phil. & T. R. R.....	234
Mattawan.....	F. & N. Y. R. R.....	48
Do..... Tuttle's gate.....	U. S. C. & G. S.....	55
Do..... bench-mark at.....	U. S. C. & G. S.....	56
Milford.....	Phil. & T. R. R.....	140
Millburn.....	Morris & Essex R. R.....	150
Millington.....	P. & D. R. R.....	279
Millville.....	M. & G. R. R.....	36
Morgan Station, bench-mark at.....	U. S. C. & G. S.....	6
Monroe.....	W. J. R. R.....	134
Montclair.....	Newark & Bloomfield R. R.....	239
Morgansville.....	F. & N. Y. R. R.....	116
Do..... Clarke's house.....	U. S. C. & G. S.....	167
Do..... Frazer's house.....	U. S. C. & G. S.....	172
Morris Plains.....	Morris & Essex R. R.....	405
Morris Ponds.....	N. J. Geol. Survey.....	920
Morristown.....	U. S. C. & G. S.....	69
Do.....	Morris & Essex R. R.....	328
Mount Airy.....	F. R. R. R.....	147
Mount Holly.....	U. S. C. & G. S.....	181
Do..... Garden street.....	U. S. C. & G. S.....	41
Do..... Rhees House.....	U. S. C. & G. S.....	38
Do..... R. R. bridge.....	U. S. C. & G. S.....	15
Mount Pisgah Hotel.....	N. J. G. S.....	850
Mulford.....	N. J. C. R. R.....	77
Navesink Highlands Light-house, bench- mark at.....	U. S. C. & G. S.....	208
Neshanic.....	N. J. C. R. R.....	94
Newark.....	N. Y., L. E. & W. R. R.....	13
Newfield.....	M. & G. R. R.....	114
New Hampton (Junction).....	Warren R. R.....	508
Do..... Summit.....	N. J. C. R. R.....	513
New Market.....	N. J. C. R. R.....	61
Newton.....	Newton & Belvidere R. R.....	610
Do east end of depot.....	Sussex R. R.....	607
North Branch.....	N. J. C. R. R.....	93
North Vineland.....	M. & G. R. R.....	107
Orange.....	Morris & Essex R. R.....	187
Oxford.....	Warren R. R.....	491
Palatine.....	W. J. R. R.....	116
Passaic.....	N. Y., L. E. & W. R. R.....	55
Paterson.....	N. Y., L. E. & W. R. R.....	89
Do..... Junction.....	N. Y., L. E. & W. R. R.....	92
Pemberton.....	U. S. C. & G. S.....	42
Penn.....	U. S. C. & G. S.....	35
Phillipsburgh, L. Valley R. R.....	Phil. & T. R. R.....	198
Pillstown.....	W. J. R. R.....	112
Pine Hill.....	U. S. C. & G. S.....	202
Plainfield.....	N. J. C. R. R.....	145

ALTITUDES IN THE UNITED STATES.

(cont.)

Station.	Authority.	Elevation.
Derby Depot	N. J. Geol. Survey	441
Dorris	Morris & Essex R. R.	922
Durray	Morris & Essex R. R.	528
Denville	Phil. & T. R. R.	86
Downtown, on street-crossing in front of bank	Camden & Amboy R. R.	921
Do	Camden & Amboy R. R.	907
Do	Camden & Amboy R. R.	8
Deaton Junction	Camden & Amboy R. R.	24
Deasey's	N. Y., L. E. & W. R. R.	3
Bank, bench-mark at	U. S. C. & G. S.	16
Degelsville	Phil. & T. R. R.	11
Deffield	N. J. C. R. R.	13
Degewood	N. Y., L. E. & W. R. R.	24
Degoes	F. R. R.	55
Deekaway	Morris & Essex R. R.	14
Deeseville Junction	Newark & Bloomfield R. R. ..	108
Deessell's Freehold	U. S. C. & G. S.	30
Deutherford	N. Y., L. E. & W. R. R.	37
Do	Morris & Essex R. R.	500
Deand Pond	N. J. Geol. Survey	28
Deandy Hook, Signal Station	U. S. Signal Office	264
Dearepta	Newton & Belvidere R. R.	56
Deotch Plains	N. J. C. R. R.	9
Deabright, bench-mark at	U. S. C. & G. S.	8
DeSomerville, bench-mark on court-house grounds	U. S. C. & G. S.	91
Do	U. S. C. & G. S.	141
DeSouth Orange	Morris & Essex R. R.	92
DeSouth Vineland	M. & G. R. R.	696
DeSparta (upper mill-dam)	N. J. G. S.	29
DeSpotswood	Camden & Amboy R. R.	312
DeSpringfield	N. J. C. R. R.	523
Do	U. S. C. & G. S.	495
Do	N. J. Geol. Survey	471
DeSpruce Run	N. J. C. R. R.	873
DeStanhope	Morris & Essex R. R.	239
DeStanley (Passaic River)	Morris & Essex R. R.	377
DeStewartville	Morris & Essex R. R.	226
DeStirling	P. & D. R. R.	235
DeStony Hill	U. S. C. & G. S.	34
DeStyles	U. S. C. & G. S.	703
DeSuccasuna	C. R. R.	504
DeSunfish Pond	N. J. Geol. Survey	521
DeSwartwout Hotel	N. J. Geol. Survey	477
Do	N. J. Geol. Survey	11
DeThree Bridges	N. J. C. R. R.	51
DeTrenton, Lock	Del. & Raritan Canal	2
Do	Camden & Amboy R. R.	3
Do	Phil. & T. R. R.	6
Do	U. S. C. & G. S.	22
DeTunis, Imlaystown	W. J. R. R.	14
DeUnion	N. J. C. R. R.	30
DeValley	W. V. R. R.	35
DeVernon	M. & G. R. R.	17
DeVineland	N. J. Geol. Survey	3
DeWalkill	Morris & Essex R. R.	51
DeWashington	Phil. & T. R. R.	1
DeWashington's Crossing	Morris & Essex R. R.	7
DeWaterloo		

Station.	Authority.	Elevation.
		<i>Feet.</i>
.....	W. & B. R. R.	134
C. & G. S. station.).....	U. S. C. & G. S.	583
.....	N. J. C. R. R.	133
i, Mount's Corner.....	U. S. C. & G. S.	183
.....	P. & D. R. R.	293
.....	W. J. R. R.	10
pot.....	Sussex R. R.	735
.....	N. J. C. R. R.	181
.....	U. S. C. & G. S.	64
.....	F. & N. Y. R. R.	141
.....	Camden & Amboy R. R.	65
.....	W. J. R. R.	34
ouse.....	U. S. C. & G. S.	188
.....	U. S. C. & G. S.	136
.....	Camden & Amboy R. R.	53

NEW MEXICO.

Station.	Authority.	Eleva
Abiquiu	Wheeler	
Abiquiu Peak	Wheeler	
Acoma	Wheeler	
Aden	S. P. R. R.	
Afton	S. P. R. R.	
Agua Azul	Wheeler	
Agua Flegra	Wheeler	
Agua Fria	Wheeler	
Agua Fria Peak	Wheeler	
Agnajes de los Guajolotes	Wheeler	
Agua Negra	Wheeler	
Alameda	Wheeler	
Do	A., T. & S. F. R. R.	
Alamillo	A., T. & S. F. R. R.	
Alamocita	Wheeler	
Alamo Gordo	Wheeler	
Alamosa	Wheeler	
Alamo Station	Wheeler	
Alanuelo	Wheeler	
Albuquerque	Wheeler	
Do	A., T. & S. F. R. R.	
Do	Med. Dept., U. S. A.	
Do	Pac. R. R. Reports	
Alcalde	D. & R. G. R. R.	
Aleman	Wheeler	
Algodones	Wheeler	
Do	A., T. & S. F. R. R.	
Amargo	D. & R. G. R. R.	
Animas Peak	Wheeler	
Annaya Spring	Wheeler	
Antelope Spring	Wheeler	
Anthony	A., T. & S. F. R. R.	
Anton Chico	A., T. & S. F. R. R.	
Do	Pac. R. R. Reports	
Apache	Wheeler	
Apache Cienega	Wheeler	
Apache Tejo	Wheeler	
Arch Spring	Pac. R. R. Reports	
Do	Wheeler	
Arny	A., T. & S. F. R. R.	
Arooyo Cuerbito	A., T. & S. F. R. R.	
Atlantic & Pacific crossing	Pac. R. R. Reports	
Atrisco	D. & R. G. R. R.	
Azotea	A., T. & S. F. R. R.	
Azul	Wheeler	
Bacon Spring	Wheeler	
Baldy (Elizabeth) Peak	Wheeler	
Baldy (Santa Fé) Peak	Wheeler	
Banded Peak	Wheeler	
Barney Station	D. & R. G. R. R.	
Barranca	Toner	
Bascom, Fort	Wheeler	
Bayard, Fort	Wheeler	
Do	astronom. mont	
Bear Peak	Wheeler	
Belen	Wheeler	
Do	A., T. & S. F. R. R.	

Station.	Authority.	Elevation.
		<i>Feet.</i>
t's Cañon Ranch.....	Toner.....	4,820
enda Spring.....	Wheeler.....	7,494
nal.....	A., T. & S. F. R. R.....	6,056
nal Hill.....	Wheeler.....	7,029
alillo.....	Wheeler.....	5,084
Do.....	A., T. & S. F. R. R.....	5,031
Horn.....	D. & R. G. R. R.....	9,000
ndente.....	Toner.....	5,406
c Mountain.....	Wheeler.....	8,909
c Peak.....	Wheeler.....	8,910
Rock Tank.....	Wheeler.....	4,180
r's Mill.....	Wheeler.....	6,449
urg.....	A., T. & S. F. R. R.....	6,840
Vater.....	A. & P. R. R.....	6,609
Vater Spring.....	Wheeler.....	6,778
s Ranch.....	Wheeler.....	4,021
Caballo.....	Wheeler.....	6,948
nk's Ranch.....	Wheeler.....	6,882
in, Camp (old).....	Wheeler.....	7,277
te.....	D. & R. G. R. R.....	7,302
ay.....	S. P. R. R.....	4,226
n's Ranch.....	Wheeler.....	7,133
Alamosa.....	Wheeler.....	6,540
de los Diegos.....	Toner.....	6,145
Ranch.....	Wheeler.....	5,088
Blanco.....	Pac. R. R. Reports.....	6,320
Blanco Pass.....	K. P. R. R. Surveys.....	7,061
cito.....	Wheeler.....	7,023
del Agua.....	A., T. & S. F. R. R.....	6,853
del Chaco.....	Wheeler.....	5,916
Pajareto.....	Wheeler.....	5,839
n Pass.....	Wheeler.....	5,099
n Peak.....	Wheeler.....	7,398
illo Spring.....	Wheeler.....	10,023
.....	Mexican Boundary Survey.....	4,455
o Peak.....	Wheeler.....	4,457
Spring.....	Wheeler.....	9,390
olorado.....	Wheeler.....	7,327
.....	Wheeler.....	4,679
.....	Wheeler.....	6,101
s.....	A., T. & S. F. R. R.....	5,667
Blanco.....	Wheeler.....	14,269
Colorado.....	Wheeler.....	5,654
de Culebra.....	Wheeler.....	6,992
Tecolote.....	Wheeler.....	7,254
.....	D. & R. G. R. R.....	7,841
isal.....	Wheeler.....	7,527
ita.....	D. & S. P. R. R.....	5,619
, Camp.....	Wheeler.....	5,374
s.....	A. & P. R. R.....	6,969
Spring.....	Wheeler.....	6,882
.....	Wheeler.....	5,647
nden's Ranch.....	Wheeler.....	5,004
adero Ranch.....	Wheeler.....	5,825
etta.....	Wheeler.....	6,411
o Hill.....	Wheeler.....	6,474
ga Amarilla.....	Wheeler.....	7,179
ga San Simon.....	Wheeler.....	3,855
ron.....	Wheeler.....	6,385
guilla.....	Wheeler.....	6,011
la.....	Wheeler.....	6,744
p's Rest (above valley 5,922 feet).....	Wheeler.....	9,773
nan.....	A., T. & S. F. R. R.....	4,356

Station.	Authority.	Elevation.
		<i>Feet.</i>
Colonas Ferry, Rio Grande	Wheeler	7,443
Colorado Mountain	Wheeler	5,654
Colorado Plaza, Rio Grande	Wheeler	4,008
Comanche	D. & R. G. R. R.	6,500
Comanche Cañon Pass	Wheeler	8,284
Cone Peak	Wheeler	12,630
Conrad, Fort	Med. Dept. U. S. A.	4,576
Constancia	Wheeler	4,711
Cooke's Spring	Mexican Boundary Survey	4,326
Cook, Mount	Wheeler	8,330
Coolidge	A. & P. R. R.	6,975
Copeland's	Wheeler	6,800
Copper Mines	Emory	6,167
Corrales	Wheeler	5,091
Costilla Pass	Wheeler	10,188
Costilla Peak	Hayden	12,634
Do	Wheeler	12,615
Cottonwood Springs	Wheeler	4,773
Covero	Pac. R. R. Reports	5,880
Cow Spring	Wheeler	5,001
Coyote Spring	Wheeler	7,202
Coyote Water-holes	Wheeler	6,775
Craig, Fort	Wheeler	4,448
Do	Med. Dept. U. S. A.	4,576
Crocker	A. T. & S. F. R. R.	4,767
Cross Spring	Wheeler	6,265
Cubero	A. & P. R. R.	5,905
Do	Wheeler	6,122
Cucamonga	Wheeler	5,914
Cuchilla	Wheeler	5,680
Cuchilla Negra	Wheeler	4,568
Cuchillo	Wheeler	5,195
Culebra	Wheeler	5,707
Culebra Peak	Wheeler	14,050
Cummings, Fort	Wheeler	4,778
Do (old)	Wheeler	4,840
Cutler	A. T. & S. F. R. R.	4,683
Datili Range, Western Peak	Wheeler	9,440
Davis Ranch	Wheeler	5,405
Deer Spring	Wheeler	5,982
Defiance	A. & P. R. R.	6,352
Do, Fort	Wheeler	7,042
Deming, junction with A. T. & S. F. R. R.	S. P. R. R.	4,327
Diablo Knoll	Wheeler	7,617
Dillon	A. T. & S. F. R. R.	6,454
Doña Ana	A. T. & S. F. R. R.	3,899
Dorsey	A. T. & S. F. R. R.	5,883
Dowlín's Mill	Wheeler	6,435
Dover	A. T. & S. F. R. R.	5,817
Dripping Springs	Wheeler	5,023
Dulce	D. & R. G. R. R.	6,767
Eagle Point (above valley 3,818 feet)	Wheeler	7,639
East Carizzo Cone	Wheeler	7,976
Elizabeth Peak	Wheeler	12,491
Elizabethtown	Wheeler	5,465
Elk Spring	Wheeler	7,415
El Moro	Wheeler	7,414
Engle	A. T. & S. F. R. R.	4,745
El Paso	Mexican Boundary Survey	3,940
Elota	A. T. & S. F. R. R.	5,123
El Puerto de la Laguna	Wheeler	7,187
El Rito	Wheeler	5,650
Do	A. & P. R. R.	5,638

Station.	Authority.	Elevation.
		<i>Feet.</i>
Embuda	Wheeler	6, 029
Do	D. & R. G. R. R.	5, 799
Emery's Ranch	Wheeler	6, 090
Escobas Peak	Wheeler	8, 278
Eslancia	Wheeler	6, 177
Espanola	D. & R. G. R. R.	5, 568
Esteros	Wheeler	5, 320
Eureka	Wheeler	4, 746
Eureka Springs	Wheeler	4, 239
Fairbell Hill	Wheeler	6, 549
Fest Ranch	Wheeler	4, 154
Fest's Ferry	Wheeler	4, 184
Fillmore, Fort	Med. Dept., U. S. A.	3, 937
Florida	A., T. & S. F. R. R.	4, 484
Florida Pass	P. R. R. Reports	4, 600
Florida Peak	Wheeler	7, 296
Fra Cristobal, Mount	Wheeler	6, 646
Fulton	A., T. & S. F. R. R.	6, 525
Gage	S. P. R. R.	4, 490
Gallinas Spring	Wheeler	7, 673
Galisteo	Wheeler	6, 117
Do	Emory	5, 915
Gallinas Peak	Wheeler	9, 798
Gallinas Ranch	Wheeler	6, 912
Gallo Spring	Wheeler	7, 587
Gallup	A. & P. R. R.	6, 477
Garcia Peak	Wheeler	9, 990
Georgetown	Wheeler	6, 455
Geysar Spring	Wheeler	5, 400
Glorieta	A., T. & S. F. R. R.	7, 415
Grama	A., T. & S. F. R. R.	4, 325
Gran Quivira	Wheeler	6, 407
Grante	A. & P. R. R.	6, 440
Guadalupita	Wheeler	7, 677
Guy Fawkes	Wheeler	6, 700
Hacheta Peak	Wheeler	8, 352
Hanover Peak	Wheeler	7, 396
Hatch	A., T. & S. F. R. R.	4, 433
Hedionda Lake	Wheeler	7, 149
Hendrick's Peak	Wheeler	7, 574
High Peak	Wheeler	9, 434
Hillsborough	Wheeler	5, 224
Horse Springs	Wheeler	7, 045
Hot Springs	Wheeler	5, 065
Do....Diamond Creek	Wheeler	5, 545
Do....(13 miles from Magruder's)	Wheeler	5, 782
Hurricane Rock	Wheeler	6, 479
Indian Agency, near Blazer's Hill	Wheeler	6, 449
Indian Ranch	Wheeler	5, 290
Inscription Rock	Pac. R. R. Reports	7, 238
Isleta	A., T. & S. F. R. R.	4, 881
Do..(river bank)	P. R. R. Reports	4, 910
Do..(top of bluffs)	P. R. R. Reports	5, 052
Jackson Ranch	Wheeler	3, 738
Jaraloso Spring	Wheeler	4, 753
James Mountain	Wheeler	9, 534
James Peak	Wheeler	8, 560
James Pueblo	Wheeler	5, 479
Juan de Dios .....	.....	4, 820
Juan Lujan Spring	Wheeler	6, 011
Kettle Spring	Wheeler	4, 540
Kingman	A. T. & S. F. R. R.	6, 804
Kiowa Spring	Wheeler	7, 226

Station.	Authority.	Elevation.
Kozlowski's Ranch	Wheeler	<i>Fed.</i> 6,805
La Bajada	Wheeler	5,515
Labato	D. & R. G. R. R.	8,281
La Bolsa	Wheeler	5,822
La Chusca	Wheeler	6,703
La Cuesta	Wheeler	5,792
Ladrones Peak	Wheeler	9,214
La Glorietta	Wheeler	7,048
Laguna	A. & P. R. R.	5,767
Do	Wheeler	6,266
Laguna del Ojo Hediondo	Wheeler	7,181
Laguna Gallinas	Wheeler	6,393
Laguna Los Griegos	Wheeler	6,656
La Jara Valley	Wheeler	6,988
La Joya	A. T. & S. F. R. R.	4,655
Do	Wheeler	5,712
Lake Peak	Wheeler	12,405
La Lacha Spring	Wheeler	4,756
La Laguna de Sal	Wheeler	6,047
La Mesilla	Wheeler	3,935
Do .. Signal Station	U. S. Signal Office	4,124
La Monica Springs	Wheeler	7,735
Lamy	A. T. & S. F. R. R.	6,458
Lanark	S. P. R. R.	4,167
Lansing	A. T. & S. F. R. R.	7,063
La Pilla	Wheeler	5,850
La Placita	Wheeler	5,129
Largo Cañon	A. T. & S. F. R. R.	5,651
Las Cruces	Wheeler	3,797
Do	A. T. & S. F. R. R.	3,871
Las Lunas	A. T. & S. F. R. R.	4,831
Las Lunitas	A. T. & S. F. R. R.	4,806
Las Playas	Wheeler	4,190
Las Tapiacitas	Wheeler	8,810
Las Tenejas	Wheeler	4,749
Las Truchas Mountain	Wheeler (Theod.)	13,150
Las Vegas	Med. Dept. U. S. A.	6,418
Do	A. T. & S. F. R. R.	6,381
Do .. Hot Springs	A. T. & S. F. R. R.	6,709
La Tenaja	Wheeler	4,701
Laughlin's Peak	Wheeler	8,950
Lava	A. T. & S. F. R. R.	4,703
Do	D. & R. G. R. R.	8,446
La Veta	Wheeler	6,266
Leidendorf's Wells	Wheeler	6,401
Le Jarra	Wheeler	6,942
Lepai	S. P. R. R.	4,505
Levy	A. T. & S. F. R. R.	6,238
Lisbon	S. P. R. R.	4,280
Llano	Wheeler	7,452
Llano Spring	Wheeler	5,348
Loma	Wheeler	7,000
Loma Parda	Wheeler	6,393
Lomitas Spring	Wheeler	5,731
Lone Mountain	Wheeler	5,986
Lordsburgh	S. P. R. R.	4,247
Los Alamos	Wheeler	6,789
Los Brazos	Wheeler	7,321
Los Cerutos del Aquila	Wheeler	7,943
Los Chavez	Wheeler	4,775
Los Cornudos	Wheeler	4,392
Los Machos	Wheeler	7,290
Los Ojos (Rio Chama)	Wheeler	7,273
Los Pinos	Wheeler	4,675

Station.	Authority.	Elevation.
		<i>Feet.</i>
elites.....	Wheeler.....	5, 134
isoe.....	Wheeler.....	7, 537
as.....	Wheeler.....	7, 941
Spring.....	Wheeler.....	7, 585
Ranch.....	A., T. & S. F. R. R.....	7, 512
thy's Ranch.....	A., F. & S. F. R. R.....	1, 397
ty.....	A., T. & S. F. R. R.....	6, 099
r's Ranch.....	A. & P. R. R.....	6, 141
or Mule Springs.....	Wheeler.....	5, 086
ght's Ranch.....	Wheeler.....	5, 261
Fort.....	Wheeler.....	6, 237
	Med. Dept. U. S. A.....	4, 500
	Wheeler.....	4, 395
lena, Mount.....	Wheeler.....	10, 798
lena Pass.....	Wheeler.....	4, 755
der's.....	Wheeler.....	5, 811
ia Spring.....	Wheeler.....	4, 106
s Spring.....	Wheeler.....	4, 799
lito.....	A. & P. R. R.....	6, 232
nares.....	A., T. & S. F. R. R.....	6, 569
no.....	Wheeler.....	6, 961
no Peak.....	Wheeler.....	10, 086
Fort.....	Med. Dept. U. S. A.....	6, 846
ez Mesa.....	Wheeler.....	6, 820
's Ranch.....	Wheeler.....	4, 771
ell.....	A., T. & S. F. R. R.....	6, 061
ero Agency,.....	Wheeler.....	6, 475
ite.....	A., T. & S. F. R. R.....	3, 815
ito Ranch.....	Wheeler.....	6, 268
io.....	Wheeler.....	6, 399
res.....	Wheeler.....	4, 920
re Forks.....	Wheeler.....	7, 563
res Mountains.....	Wheeler.....	10, 061
res Settlement.....	Wheeler.....	5, 007
Peak.....	King.....	7, 339
	D. & R. G. R. R.....	7, 256
Spring.....	Wheeler.....	7, 602
ation.....	Wheeler.....	6, 528
Peak.....	Wheeler.....	9, 723
Spring.....	Wheeler.....	4, 336
pring.....	Wheeler.....	5, 222
prings, 5 miles W. of Macho Springs.....	Wheeler.....	5, 652
an's.....	Wheeler.....	6, 912
y's Ranch, Carrizozo Spring.....	Wheeler.....	5, 300
ento.....	Wheeler.....	7, 300
ento Peak.....	Wheeler.....	10, 045
Pueblo.....	Wheeler.....	6, 045
Spring.....	Mexican Boundary Survey...	4, 310
lacer.....	Wheeler.....	6, 667
ork Mountain.....	Wheeler.....	10, 594
Head Spring.....	Wheeler.....	4, 861
sa.....	D. & R. G. R. R.....	8, 183
Peak.....	Wheeler.....	9, 983
Franklin Peak.....	Wheeler.....	7, 070
	Wheeler.....	6, 901
Spring.....	Wheeler.....	6, 934
s Plaza.....	Wheeler.....	7, 455
	A., T. & S. F. R. R.....	4, 689
ring.....	Wheeler.....	5, 243
ring Encinoso.....	Wheeler.....	7, 204
		5, 922
Crater.....	Wheeler.....	8, 903
de las Cuevas.....	Wheeler.....	5, 902
arillo.....	Wheeler.....	6, 384

Station.	Authority.	Elevation.
		<i>Feet.</i>
Ojo Caliente.....	Wheeler.....	6,222
Ojo Chameleon.....	Wheeler.....	6,401
Ojo Datil.....	Wheeler.....	7,419
Ojo de Estancia.....	Wheeler.....	6,177
Ojo de Inez.....	Mexican Boundary Survey.....	5,223
Ojo de Judío.....	Wheeler.....	9,229
Ojo de la Casa.....	Wheeler.....	6,243
Ojo de la Culebra.....	Wheeler.....	5,707
Ojo del Alto Peak.....	Wheeler.....	6,350
Ojo de la Parida.....	Wheeler.....	4,929
Ojo de la Quincea.....	Wheeler.....	5,673
Ojo de las Cañas.....	Wheeler.....	5,131
Ojo de la Tunisa.....	Wheeler.....	5,673
Ojo del Cibolo.....	Wheeler.....	5,640
Ojo del Indio.....	Wheeler.....	9,229
Ojo de los Cazos.....	Wheeler.....	7,615
Ojo del Oso.....	Wheeler.....	7,726
Ojo de los Valles.....	Wheeler.....	6,979
Ojo del Perro.....	Mexican Boundary Survey.....	4,692
Ojo del Pescado.....	Pac. R. R. Reports.....	6,551
Ojo de Nuestra Señora.....	Wheeler.....	6,606
Ojo de Vaca.....	Wheeler.....	6,864
Ojo de Vaca.....	Mexican Boundary Survey.....	4,929
Ojo Galle.....	Wheeler.....	7,943
Ojo Milagro.....	Wheeler.....	5,173
Ojos Calientes.....	Wheeler.....	5,594
Onava.....	A., T. & S. F. R. R.....	6,726
Ord Peak.....	Wheeler.....	10,024
Organ Mountain.....	Wheeler (Theod.).....	9,102
Organ Mountain Pass.....	P. R. R. Reports.....	5,467
Ortiz.....	A., T. & S. F. R. R.....	5,819
Oscura Water Holes.....	Wheeler.....	5,461
Osha Peak.....	Wheeler.....	10,023
Oteño.....	A., T. & S. F. R. R.....	6,377
Pajarida.....	.....	4,833
Palmillo.....	D. & R. G. R. R.....	8,236
Palomas.....	Wheeler.....	4,127
Paraje.....	Wheeler.....	4,319
Paria Spring.....	Wheeler.....	6,896
Parida.....	Wheeler.....	4,627
Pastora.....	Hayden.....	9,332
Patero.....	Wheeler.....	6,123
Patterson's Ranch.....	Wheeler.....	4,590
Payanda.....	Toner.....	4,833
Pecos Village.....	Emory.....	6,366
Pedernal.....	Wheeler.....	7,140
Pedernal Pass.....	Wheeler.....	7,181
Pedernal Peak.....	Wheeler.....	7,580
Pedernal Water Hole.....	Wheeler.....	7,140
Pelado Peak.....	Wheeler.....	11,260
Peloncillo Pass.....	T. & P. R. R. Surveys.....	4,446
Peña Blanca.....	Wheeler.....	5,170
Peñasco.....	Wheeler.....	7,452
Peralta.....	Wheeler.....	4,661
Pescado Spring.....	Wheeler.....	6,546
Picacho Crossing.....	Wheeler.....	3,784
Picacho de Sabiná.....	Wheeler.....	4,676
Picacho Peak.....	Wheeler.....	4,825
Picuris Pueblo.....	Wheeler.....	7,108
Pinos Altos.....	Wheeler.....	6,845
Pinos Altos Peak.....	Wheeler.....	8,128
Pintado Pueblo.....	Wheeler.....	6,506
Placer Mountain.....	Wheeler.....	8,927
Plaza de Alcalde.....	Wheeler.....	5,756

Station.	Authority.	Elevation.
		<i>Feet.</i>
Plaza Mangos	Wheeler.....	7,319
Point of Rocks	Wheeler.....	4,268
Pojoaque	Wheeler.....	5,750
Polvadero Peak	Wheeler.....	7,324
Ponil Pass	Wheeler.....	9,848
Pope	A., T. & S. F. R. R.....	4,557
Posos del Pino	Wheeler.....	6,055
Pueblo Colorado	Wheeler.....	6,368
Pueblo Springs.....	Wheeler.....	6,363
Safford P. O.....	Wheeler.....	2,712
Puercito	Wheeler.....	6,247
Puertocito	Wheeler.....	6,428
Puertocito Spring	Wheeler.....	6,499
Punta del Agua	Wheeler.....	6,599
Pyramid	S. P. R. R.....	4,303
Pyramid Hill.....	Wheeler.....	6,628
Queletes .....	.....	5,193
Ralston	Wheeler.....	4,488
Rancheria Viega	Wheeler.....	7,300
Ranchos de Taos	Wheeler.....	6,983
Randall.....	A., T. & S. F. R. R.....	3,947
Raton	A., T. & S. F. R. R.....	6,620
Rattlesnake Hill	Wheeler.....	6,617
Rayado .....	.....	6,946
Real Dolores	Wheeler.....	6,802
Recas	A., T. & S. F. R. R.....	7,049
Remances	Toner.....	6,185
Rincon.....	A., T. & S. F. R. R.....	4,014
Rinconada	Wheeler.....	5,829
Rio Puerco	A. & P. R. E.....	5,026
Rito Mangos	Wheeler.....	7,319
Rito Quemado.....	Wheeler.....	6,827
Roblado Peak	Wheeler.....	5,575
Rock Ranch	Wheeler.....	5,844
Romero	A., T. & S. F. R. R.....	6,286
Rock Spring	Wheeler.....	6,849
Rogers	S. P. R. R.....	3,730
Rosario	A., T. & S. F. R. R.....	5,400
Labinal	A., T. & S. F. R. R.....	4,741
Do	Wheeler.....	5,087
Labinal Agency	Wheeler.....	4,757
Salado	Wheeler.....	6,321
Salinas Peak.....	Wheeler.....	9,040
San Antonio	A., T. & S. F. R. R.....	4,517
Do	Pacific R. R. Reports.....	6,409
Do	Wheeler.....	5,625
San Antonio Peak	Wheeler.....	10,912
Do	Hayden.....	10,833
San Antonio Valley	Wheeler.....	8,367
San Augustine	Wheeler.....	6,002
San Augustine Pass	Wheeler.....	5,654
San Augustine Plain	Wheeler.....	6,780
Sanchez Ranch	Wheeler.....	7,298
Sierra Mountains, summit of	Wheeler.....	10,609
San Domingo .....	.....	5,190
San Felipe	Wheeler.....	5,007
San Francisco (upper) plaza	Wheeler.....	5,688
Do	Wheeler.....	5,638
Do	Wheeler.....	5,639
San Francisco, on Rio Puerco	Wheeler.....	5,444
San Geronimo	Wheeler.....	6,724
San Ignacio	Wheeler.....	5,515
San Ildefonso	Wheeler.....	5,457
San Isidro	Wheeler.....	5,460

Station.	Authority.	Elevation.
San José.....	A. & P. R. R.....	5,400
Do.....	Wheeler.....	5,400
San Juan.....	Wheeler.....	5,400
Do...Pueblo.....	Wheeler.....	6,100
San Lorenzo.....	Wheeler.....	5,200
San Lorenzo Spring.....	Wheeler.....	5,150
San Luis Rey.....	Wheeler.....	4,400
San Marcial.....	A., T. & S. F. R. R.....	4,300
Do.....	Wheeler.....	6,000
San Marcos Spring.....	Wheeler.....	7,300
San Mateo.....	Wheeler.....	1,200
San Mateo Mountain.....	Wheeler.....	4,000
San Miguel.....	A., T. & S. F. R. R.....	6,200
Sands.....	A., T. & S. F. R. R.....	6,200
San Nicolas Spring.....	Wheeler.....	4,400
San Pedro.....	Wheeler.....	6,500
San Rafael.....	Wheeler.....	5,300
Santa Aña.....	Wheeler.....	6,511
Santa Clara.....	Wheeler (Theod.).....	11,500
Santa Clara Mountain.....	Wheeler.....	5,500
Santa Cruz.....	Wheeler.....	7,000
Santa Fé.....	A., T. & S. F. R. R.....	6,900
Do.....	U. S. Signal Office.....	6,800
Do...Signal Station.....	Wheeler.....	12,000
Santa Fé Baldy Peak.....	Wheeler.....	6,161
Santa Rita.....	Wheeler.....	6,161
Santa Rita Copper Mines.....	Mexican Boundary.....	6,100
Santa Rita del Cobre.....	Wheeler.....	5,110
Santo Domingo.....	Wheeler.....	7,418
Santo Niño del Rincon.....	Wheeler.....	6,876
Sapello.....	Wheeler.....	6,694
Sayer's Bench.....	Wheeler.....	6,694
Sayer's Ranch.....	Wheeler.....	3,900
Selden, Fort.....	A., T. & S. F. R. R.....	3,937
Do.....	A., T. & S. F. R. R.....	4,400
Sellers.....	Wheeler.....	6,745
Servilleta.....	D. & R. G. R. R.....	7,706
Do.....	Wheeler.....	4,378
Shedd's Ranch, San Augustin.....	Toner.....	5,310
Sheep Springs.....	Wheeler.....	6,927
Sherman, Camp (old).....	A., T. & S. F. R. R.....	6,254
Shoemaker.....	A., T. & S. F. R. R.....	6,677
Silla.....	A., T. & S. F. R. R.....	5,771
Silver City.....	U. S. Signal Office.....	5,796
Do...Signal Station.....	Wheeler.....	7,638
Silver Springs.....	Wheeler.....	4,519
Stocum.....	A., T. & S. F. R. R.....	4,565
Socorro.....	Wheeler.....	4,650
Do.....	Med. Dept., U. S. A.....	4,560
Do.....	U. S. Signal Office.....	4,565
Do...Signal Station.....	Wheeler.....	4,534
Socorro Ford.....	Wheeler.....	7,261
Socorro Peak.....	Wheeler.....	7,261
South Florida Peak.....	Wheeler.....	8,732
South Oscura Mountain.....	Wheeler.....	8,567
South Sandia Peak.....	A., T. & S. F. R. R.....	5,766
Springer.....	Wheeler.....	6,151
Stanton, Fort (flagstaff).....	Wheeler.....	6,249
Stinking Springs.....	Wheeler.....	5,844
Stone Ranch, on Canadian River.....	S. P. R. R.....	4,085
Strauss.....	D. & R. G. R. R.....	9,215
Sublette.....	A., T. & S. F. R. R.....	5,973
Sulzbacher.....	A. & P. R. R.....	5,264
Suna.....		

Station.	Authority.	Elevation.
		<i>Feet.</i>
Sunday Peak	Wheeler	6,030
Sweetwater Spring.....	Wheeler	6,343
Tanques de Canonicito.....	Wheeler	5,083
Tanques de las Animas	Wheeler	6,404
Taos	Wheeler	6,983
Taos Pass	Wheeler	9,292
Taos Peak	Wheeler	13,145
Taos Plaza	Wheeler	6,949
Tapiacitas	Wheeler	8,870
Taylor, Mount	Wheeler	11,391
Taylor's Ranch	Wheeler	7,226
Tecoloto	Wheeler	6,668
Tesuque	A., T. & S. F. R. R	5,844
Tetilla Peak	Wheeler	7,060
Thomas, Mount	Wheeler	11,275
Thompson's Spring	Wheeler	7,607
Thorn, Fort	Med. Dept. U. S. A	4,500
Thunder Peak	Wheeler	9,122
Tierra Amarilla	Wheeler	7,466
Tijeras	Wheeler	6,214
Tipton	A., T. & S. F. R. R	6,363
Toas Keto	Wheeler	6,506
Toltec	A. & P. R. R	9,443
Tomasceños Water Holes	Wheeler	5,502
Tomé	Wheeler	4,879
Torreón Springs	Wheeler	5,980
Tounce	A., T. & S. F. R. R	3,975
Toussaints Ranch	Wheeler	4,634
Tres Cerros Spring	Wheeler	6,128
Tres Hermanos Peak	Wheeler	7,151
Tres Piedras	D. & R. G. R. R	8,066
Trinidad .....	.....	5,725
Triplets	Wheeler	4,347
Truchas	Wheeler	7,622
Truchas Peak	Wheeler	13,150
Tularosa	Wheeler	4,344
Tulerosa, Fort (old)	Wheeler	6,740
Tule Spring	Wheeler	5,925
Tunica Mesa	Wheeler	5,510
Tunis	S. P. R. R	4,424
Union, Fort	Wheeler	6,711
Do	Med. Dept. U. S. A	6,670
United States Mountain	Med. Dept. U. S. A	10,734
Upham	A., T. & S. F. R. R	4,537
Upper Abo Pass	Wheeler	6,431
Ute Peak	Wheeler	10,151
Valencia	Wheeler	4,980
Valverde	A., T. & S. F. R. R	4,469
Van Brummer	Wheeler	8,557
Vegas Village	Emory	6,418
Venado Spring	Wheeler	5,982
Vermejo	Wheeler	7,823
Vernal Springs	Emory	6,299
Vincent, Camp	Wheeler	6,188
Volcano	D. & R. G. R. R	8,465
Volunteer Spring	Wheeler	7,106
Wagon Mound	A., T. & S. F. R. R	6,176
Waldo	A., T. & S. F. R. R	5,604
Wallace	A., T. & S. F. R. R	5,246
Warm Springs	Wheeler	5,008
Watrous	A., T. & S. F. R. R	6,396
Watson	A., T. & S. F. R. R	4,493
Webster, Fort	Med. Dept. U. S. A	6,350
West Gallinas Mountain	Wheeler	8,464

Station.	Authority.	Elevation
West Jicarilla Cone	Wheeler.....	
Whetstone	Toner	
White Oak Spring	Wheeler.....	
White Sands	Wheeler.....	
Willow Creek	D. & R. G. R. R.	
Willow Spring	Wheeler.....	
Wilna	S. P. R. R.	
Wingate	A. & P. R. R.	
Wingate, Fort	Wheeler.....	
Do..... Sun Dial	U. S. Geol. Survey (levels)....	
Winter Spring.....	Wheeler.....	
Winter's Ranch, Jicarilla Mountains	Wheeler.....	
Yucca, Camp.....	Wheeler.....	
Zandia.....	Toner	
Zuni	Toner	
Do.....	S. P. R. R.	
Do, old.....		
Zuni Pass	K. P. R. R. Surveys.....	

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Station.	Authority.	Elevation.
		<i>Fect.</i>
.....	Appal. Club	546
.....	R., W. & O. R. R.	599
.....	R., W. & O. R. R.	619
.....	A. & S. R. R.	212
.....	N. Y., L. E. & W. R. R.	993
.....	N. Y., L. E. & W. R. R.	1,112
.....	A. & S. R. R.	979
.....	N. Y. C. & H. R. R. R.	765
.....	N. Y. C. & H. R. R. R.	30
.....	A. & S. R. R.	16
ble	N. Y. C. & H. R. R. R.	32
ation	U. S. Signal Office	75
dson River	U. S. C. & G. S.	6
.....	N. Y., C. & H. R. R.	547
Station	U. S. Lake Survey	711
.....	N. Y., L. E. & W. R. R.	964
.....	N. Y., L. E. & W. R. R.	938
.....	N. Y., L. E. & W. R. R.	1,660
.....	N. Y., L. E. & W. R. R.	1,422
ation	N. Y. State Survey	503
.....	N. Y., L. E. & W. R. R.	1,410
.....	N. Y. & N. R. R.	364
.....	N. Y. State Survey	793
Station	U. S. Lake Survey	260
.....	Geol. Survey of N. Y.	2,079
.....	N. Y. C. & H. R. R. R.	279
ies	P. H. & B. R. R.	570
.....	N. Y., L. E. & W. R. R.	1,640
l	Adirondack Survey	3,216
.....	R. N. & P. R. R.	1,455
.....	L. S. & M. S. R. R.	687
.....	C. C. & A. R. R.	1,672
in	Adirondack Survey	3,433
.....	S. & B. R. R.	1,227
.....	B., N. Y. & P. R. R.	1,457
.....	N. Y. L. E. & W. R. R.	1,199
.....	U. & D. R. R.	1,342
.....	N. Y. & N. R. R.	139
' O. (Catskills)	Appal. Club	1,435
(Catskills)	Appal. Club	3,420
.....	M., D. & C. R. R.	451
.....	N. Y., L. E. & W. R. R.	998
.....	N. Y., L. E. & W. R. R.	1,086
.....	G., I. & S. R. R.	394
.....	N. Y. C. & H. R. R. R.	674
.....	Southern Cent. R. R.	666
.....	L., A. & W. R. R.	639
m	City Engineer	673
.....	B., N. Y. & P. R. R.	925
.....	Geol. Survey of N. Y.	2,065
.....	N., D. & C. R. R.	337
Adirondacks)	Adirondack Survey	2,846
.....	Geol. Survey of N. Y.	2,856
.....	N. Y., L. E. & W. R. R.	1,198
.....	N. Y., L. E. & W. R. R.	585
.....	A. & S. R. R.	994
n	Adirondack Survey	3,904

Station.	Authority.	Elevation.
		<i>Feet.</i>
Bald Mountain.....	Adirondack Survey.....	2,302
Bald Peak (Adirondacks).....	Adirondack Survey.....	2,084
Do.....	Geol. Survey of N. Y.....	2,065
Do... (Moriah).....	Adirondack Survey.....	2,120
Baldwin Place.....	N. Y. & N. R. R.....	621
Baldwinsville.....	O. & S. R. R.....	390
Ballston.....	R. & S. R. R.....	310
Balm of Gilead Mountain.....	Adirondack Survey.....	1,953
Balsam Mountain north end (Catskills).....	Appal. Club.....	3,571
Do..... south end (Catskills).....	Appal. Club.....	3,601
Barlow Hill (Catskills).....	Appal. Club.....	2,651
Bartlett.....	Rome & C. R. R.....	558
Bartlett Mountain.....	Adirondack Survey.....	3,715
Barton.....	N. Y., L. E. & W. R. R.....	803
Barto Geodetic Station.....	N. Y. State Survey.....	1,652
Basin Mountain.....	Adirondack Survey.....	4,906
Basket.....	N. Y., L. E. & W. R. R.....	830
Batavia.....	N. Y. C. & H. R. R. R.....	895
Do. Geodetic Station.....	U. S. Lake Survey.....	761
Bath.....	N. Y., L. E. & W. R. R.....	1,105
Beach, Lake.....	Geol. Survey of N. Y.....	1,914
Bear-pen Mountain, approx.....	Appal. Club.....	3,545
Beaver Dam.....	N. Y., L. E. & W. R. R.....	405
Beaver Dams.....	S. G. & C. R. R.....	1,279
Beaver Lake.....	Toner.....	1,409
Beaver Meadow Pond.....	Geol. Survey of N. Y.....	2,194
Bedford.....	N. Y. & H. R. R.....	291
Beech Ridge Gap.....	Appal. Club.....	3,096
Bee Line Mountain, approx.....	Appal. Club.....	3,300
Belle Ayr Mountain.....	Appal. Club.....	3,394
Bellona.....	N. C. R. R.....	863
Belvedere.....	N. Y., L. E. & W. R. R.....	1,384
Bennet Notch.....	Appal. Club.....	1,994
Bennett's Pond.....	Geol. Survey of N. Y.....	1,985
Bergen.....	N. Y. C. & H. R. R. R.....	609
Berkshire.....	S. C. R. R.....	1,045
Bessemer.....	U., I. & E. R. R.....	949
Best Hill.....	Appal. Club.....	2,649
Bethel.....	U., D. & C. R. R.....	505
Big Flats.....	N. Y., L. E. & W. R. R.....	915
Big Indian.....	U. & D. R. R.....	1,213
Big Island.....	N. Y., L. E. & W. R. R.....	393
Big Westkill Mountain.....	Appal. Club.....	3,896
Billings.....	U., D. & C. R. R.....	391
Binghams.....	G., I. & S. R. R.....	894
Binghamton.....	N. Y., L. E. & W. R.....	868
Do.....	Del., L. & W. R. R.....	846
Do.....	A. & S. R. R.....	859
Do..... N. Y. & Erie Junction.....	S. & B. R. R.....	853
Bingley.....	C., C. & D. R. R. R.....	1,041
Binnewater.....	W. V. R. R.....	219
Birch Kill Notch.....	Appal. Club.....	2,334
Birds and Worms.....	R. & L. O. R. R.....	399
Black Dome.....	Appal. Club.....	4,003
Black Head.....	Appal. Club.....	3,945
Black River.....	U. & B. R. R.....	575
Black Rock.....	N. Y. C. & H. R. R. R.....	595
Blanterville.....	N. Y., L. E. & W. R. R.....	167
Blodgett Mills.....	S. & B. R. R.....	1,086
Bloods.....	N. Y., L. E. & W. R. R.....	1,325
Blossburg.....	C., C. & A. R. R.....	1,348
Blue Mountain.....	Adirondack Survey.....	3,825
Blue Mountain Lake.....	Geol. Survey of N. Y.....	1,822

Station.	Authority.	Elevation.
		<i>Feet.</i>
Bog Lake	Geol. Survey of N. Y.	1,755
Boiceville	U. & D. R. R.	604
Booneville	U. & B. R. R. R.	1,135
Boreas Mountain	Geol. Survey of N. Y.	3,726
Boston Corner	P., H. & B. R.	738
Bouchon	N. Y., L. E. & W. R. R.	852
Breesport	U., I. & E. R. R.	1,097
Brewerton	R., W. & O. R.	384
Brewster	N. Y. & N. R. R.	406
Do	N. Y. & H. R. R.	414
Bridgewater	U. C. & S. R. R.	1,188
Brier Hill	U. & B. R. R.	276
Brinckerhoff	U., D. C. R. R.	223
Brockport	N. Y. C. & H. R. R.	546
Do... Geodetic Station	U. S. Lake Survey	731
Brocton	L., S. & M. S. R. R.	689
Brodhead's Bridge	U. & D. R. R.	504
Broome Centre, hotel	Appal. Club	1,973
Brown's Station	U. & D. R. R.	530
Bucktooth	A. & G. W. R. R.	1,376
Buffalo	N. Y., L. E. & W. R. R.	588
Do... Exchange street	N. Y. C. & H. R. R. R.	584
Do... City Hall (ground), Geodetic Sta- tion	U. S. Lake Survey	609
Do... Main street	N. Y., L. E. & W. R. R.	630
Do... Signal Station	U. S. Signal Office	664
Buffalo Plains, Geodetic Station	U. S. Lake Survey	685
Bulger, Geodetic Station	N. Y. State Survey	833
Bulwagga Mountain	Geol. Survey of N. Y.	1,260
Burns	N. Y., L. E. & W. R. R.	1,203
Burnt Mountain (Adirondacks)	Adirondack Survey	2,085
Do	Appal. Club	3,170
Byron	N. Y. C. & H. R. R. R.	695
Cade Mountain (Catskills)	Appal. Club	2,390
Cadyville	Chat. R. R.	732
Cairo (Catskills)	Appal. Club	346
Caledonia	N. Y. C. & H. R. R. R.	658
Do	N. Y., L. E. & W. R. R.	667
Callicoon	N. Y., L. E. & W. R. R.	781
Camden	R. W. & O. R. R.	520
Camel's Hump	Adirondack Survey	3,548
Cameron	N. Y., L. E. & W. R. R.	1,056
Cameron Mills	N. Y., L. E. & W. R. R.	1,029
Campbell	N. Y., L. E. & W. R. R.	1,014
Campbell Hall	N. Y., L. E. & W. R. R.	396
Campville	N. Y., L. E. & W. R. R.	830
Canaan	Boston & Albany R. R.	869
Canandaigua	N. C. R. R.	740
Canaseraga	N. Y. C. & H. R. R. R.	418
Canastota	N. Y., W. S. & B. R. R.	426
Candor	C. & L. R. R.	822
Canisteo	N. Y., L. E. & W. R. R.	1,134
Cape Vincent	R. W. & O. R. R.	253
Carmel	N. Y. C. & N. R. R.	519
Caroline	C. & S. R. R.	968
Carpenter, Geodetic Station	N. Y. State Survey	1,105
Carrollton	N. Y., L. E. & W. R. R.	1,399
Carthage	U. & B. R. R. R.	740
Cascade	S. C. R. R.	724
Cassadaga, surface of water	D., A. V. & P. R. R.	1,309
Cassville	U. C. & S. R. R.	1,215
Do... Junction	U. C. & S. R. R.	1,179
Castile	N. Y., L. E. & W. R. R.	1,401
Do... summit	N. Y., L. E. & W. R. R.	1,433

Station.	Authority.	Elevation. Feet.
Castleton	U. S. C. & G. S.	19
Do.. Boulder, corner Medder and River streets	U. S. C. & G. S.	21
Castor Land	U. & B. R. R. R.	745
Cato	S. C. R. R.	423
Catskill Lakes	Appal. Club	2,140
Catskill Mountain House	Appal. Club	2,225
Cattaraugus	N. Y., L. E. & W. R. R.	1,411
Cayuga	N. Y. C. & H. R. R. R.	388
Do.. Lake, 1878	G. I. & S. R. R.	383
Cazenovia	C., C. & D. R. R. R.	1,176
Do	S. & C. V. R. R.	1,191
Do.. Lake	Toner	900
Cedar Lake	Geol. Survey of N. Y.	2,530
Do	Adirondack Survey	2,493
Cedar River Settlement	Adirondack Survey	1,670
Central Valley	N. Y., L. E. & W. R. R.	476
Centre	N. Y. C. & H. R. R. R.	324
Centreville	A. & S. R. R.	964
Chain Ponds	Adirondack Survey	1,707
Champlain Lake	Adirondack Survey	91
Do	R. R. Reports	101
Chapp, Geodetic Station	N. Y. State Survey	1,280
Charley Pond	Adirondack Survey	1,687
Charlotte	N. Y. C. & H. R. R. R.	255
Charlotte Junction	N. Y. C. & H. R. R. R.	523
Chatanqua Lake	Toner	1,291
Chatham	Boston & Albany R. R.	462
Chatham Center	Boston & Albany R. R.	315
Chaumont	R., W. & O. R. R.	294
Cheektowaga	N. Y., L. E. & W. R. R.	661
Chemung	N. Y., L. E. & W. R. R.	817
Chemung Junction	U., I. & E. R. R.	902
Chenango Forks	U., C. & S. R. R.	901
Cherry Valley	U. & S. R. R.	1,321
Chester	N. Y., L. E. & W. R. R.	459
Chestnut Ridge, Geodetic Station	N. Y. State Survey	498
Chicago	U., I. & E. R. R.	1,169
Chittenango	N. Y. C. & H. R. R. R.	417
Chittenango Falls	C., C. & D. R. R. R.	1,051
Churchville	N. Y. C. & H. R. R. R.	570
Clarence Centre	N. Y. C. & H. R. R. R.	643
Clark's Mills	Rome & C. R. R.	528
Clayton	U. & B. R. R. R.	232
Clear Lake	Geol. Survey of N. Y.	2,006
Clear Pond	Adirondack Survey	1,655
Cleveland	N. Y. & O. R. R.	418
Clinton	Rome & C. R. R.	583
Clinton Corners	P., H. & B. R. R.	288
Clockville	C., C. & D. R. R. R.	637
Clove Branch Junction	N., D. & C. R. R.	289
Clum Hill (Catskills)	Appal. Club	2,372
Clyde	N. Y. C. & H. R. R. R.	396
Do.. Geodetic Station	U. S. Lake Survey	642
Clyde, Geodetic Station	N. Y. State Survey	633
Clymer	B. C. & P. R. R.	1,146
Cobble Hill	Adirondack Survey	1,936
Cobleskill	A. & S. R. R.	903
Cochecton	N. Y., L. E. & W. R. R.	748
Coffins	N. D. & C. R. R.	659
Colden, Lake	Adirondack Survey	2,748
Do	Guyot	2,786
Colden Mountain	Adirondack Survey	4,708
Collamer, Geodetic Station	N. Y. State Survey	485

Station.	Authority.	Elevation.
		<i>Feet.</i>
Collins.....	A. & S. R. R.....	1, 118
Colonel's Chair, highest (Catskill's).....	Appal. Club.....	3, 165
Columbus Summit.....	N. Y., K. & S. R. R.....	1, 553
Colvin, Lake.....	Geol. Survey of N. Y.....	1, 991
Do.....	Adirondack Survey.....	4, 142
Conesus.....	N. Y., L. E. & W. R. R.....	1, 220
Conewango Creek.....	B. & S. W. R. R.....	1, 270
Conklin.....	Del., L. & W. R. R.....	852
Conneaut, Geodetic Station.....	U. S. Lake Survey.....	882
Cooksburg (Catskill).....	Appal. Club.....	756
Coopers.....	N. Y., L. E. & W. R. R.....	970
Corbetsville.....	Del., L. & W. R. R.....	855
Corfu.....	N. Y., C. & H. R. R. R.....	863
Cornell Mountain (Catskills).....	Appal. Club.....	3, 681
Corning.....	N. Y., L. E. & W. R. R.....	942
Cornwall.....	N. Y., L. E. & W. R. R.....	280
Cornwallville (Catskills).....	Appal. Club.....	950
Cortland.....	U., I. & E. R. R.....	1, 116
Cossitt, Geodetic Station.....	N. Y. State Survey.....	1, 020
Covert.....	G. I. & S. R. R.....	853
Crafts.....	N. Y. C. & N. R. R.....	402
Craigville.....	N. Y., L. E. & W. R. R.....	455
Crain's Mills.....	C. C. & De R. R. R.....	1, 172
Crain's Mountain.....	Adirondack Survey.....	3, 253
Do.....	Adirondack Survey.....	3, 239
Cranberry Creek.....	F. J. & G. R. R.....	759
Cranberry Lake.....	Toner.....	1, 570
Crane's Village.....	N. Y. C. & H. R. R. R.....	270
Cranson, Geodetic Station.....	N. Y. State Survey.....	1, 321
Crittenden.....	N. Y. C. & H. R. R. R.....	848
Crooked Lake.....	Geol. Survey of N. Y.....	2, 022
Croton Falls.....	N. Y. & H. R. R.....	356
Croton Lake.....	N. Y., B. & M. R. R.....	167
Crystal Lake.....	Geol. Survey of N. Y.....	1, 663
Cuba.....	N. Y., L. E. & W. R. R.....	1, 542
Cuba Summit.....	N. Y., L. E. & W. R. R.....	1, 698
Canastota, Geodetic Station.....	N. Y. State Survey.....	588
Curtis.....	N. Y., L. E. & W. R. R.....	997
Cuyler.....	C. C. & De R. R. R.....	1, 225
Cuylerville.....	N. Y., L. E. & W. R. R.....	528
Dale.....	N. Y., L. E. & W. R. R.....	1, 190
Dannemora.....	Chat. R. R.....	1, 356
Dansville.....	N. Y., L. E. & W. R. R.....	691
Darien.....	N. Y., L. E. & W. R. R.....	1, 024
Davison, Geodetic Station.....	N. Y. State Survey.....	631
Dayton.....	N. Y., L. E. & W. R. R.....	1, 346
Deep Hollow Mountain (Catskills).....	Appal. Club.....	3, 500
Deer Park Summit.....	N. Y., L. E. & W. R. R.....	901
Delong Mountain (Catskills).....	Appal. Club.....	2, 540
Delphi.....	C. C. & De R. R. R.....	1, 309
Deposit.....	N. Y., L. E. & W. R. R.....	1, 009
Devereux, Geodetic Station.....	N. Y. State Survey.....	832
De Ruyter.....	C. C. & De R. R. R.....	1, 276
Devil's Ear Mountain.....	Adirondack Survey.....	3, 904
Dewitt.....	N. Y. C. & H. R. R. R.....	417
Do...Centre.....	S. & C. V. R. R.....	410
Dickinson.....	N. Y., L. E. & W. R. R.....	954
Discovery Mountain.....	Adirondack Survey.....	1, 583
Do.....little.....	Adirondack Survey.....	1, 376
Dix's Peak.....	Adirondack Survey.....	4, 916
Do.....	Geol. Survey of N. Y.....	5, 200
Dobb's Ferry.....	U. S. C. & G. S.....	12
Dolbey's.....	S. & C. V. R. R.....	408
Doubletop (Catskills).....	Appal. Club.....	3, 875

Station.	Authority.	Elevation.
		<i>Feet.</i>
Draper Geodetic Station.....	N. Y. State Survey.....	653
Dresden Station.....	S., G. & C. R. R.....	515
Dryden.....	S. C. R. R.....	1,079
Dryden Lake, surface water.....	S. C. R. R.....	1,103
Duanesburg.....	A. & S. R. R.....	793
Duck Island, Geodetic Station.....	U. S. Lake Survey.....	274
Dundee.....	S., G. & C. R. R.....	990
Dunkirk, Union Depot.....	L. S. & M. S. R. R.....	338
Do..... A. V. and P. R. R. crossing.....	B. & S. W. R. R.....	1,360
Durham Centre (Catskills).....	Appal. Club.....	850
Dutchess Junction.....	N., D. & C. R. R.....	9
Eagle Mountain (Catskills).....	N., D. & C. R. R.....	3,560
Eagle, Geodetic Station.....	N. Y. State Survey.....	1,253
Eagle Summit.....	R. & St. L. R. R.....	1,916
Earlville.....	U., C. & S. V. R. R.....	1,125
Do.....	S. & C. V. R. R.....	1,071
East Albany.....	N. Y. C. & H. R. R. R.....	23
East Bloomfield.....	N. Y. C. & H. R. R. R.....	883
East Buffalo.....	N. Y., L. E. & W. R. R.....	607
East Chatham.....	Boston & Albany R. R.....	691
East Clarion.....	N. Y., R. & P. R. R.....	1,463
East Creek.....	N. Y. C. & H. R. R. R.....	334
East Tarrytown.....	N. Y. C. & N. R. R.....	305
East Hill, Geodetic Station.....	N. Y. State Survey.....	2,309
East Homer.....	C., C. & De R. R. R.....	1,135
East Jewett (Catskills).....	Appal. Club.....	3,146
East Kill Mountain (Catskills).....	Appal. Club.....	3,190
East Pembroke.....	N. Y. C. & H. R. R. R.....	885
East River.....	C., C. & De R. R. R.....	1,130
East Sing Sing.....	N. Y. C. & N. R. R.....	246
East Waverly.....	G., I. & S. R. R.....	806
Eaton, Geodetic Station.....	N. Y. State Survey.....	1,315
Eaton.....	N. Y. & O. R. R.....	1,227
Ebenezer.....	B., N. Y. & P. R. R.....	640
Eckford Lake.....	Toner.....	1,791
Eden.....	B. & S. W. R. R.....	810
Edwards.....	Boston & Albany R. R.....	939
Elk Lake.....	Geol. Survey of N. Y.....	2,053
Elkland.....	Corning, C. & A. R. R.....	1,142
Ellicottville.....	R. & S. L. R. R.....	1,500
Do..... water surface, Great Valley Creek.....	R. & S. L. R. R.....	1,542
Elma.....	B., N. Y. & P. R. R.....	827
Elmira.....	N. Y., L. E. & W. R. R.....	863
Emmons.....	A. & S. R. R.....	1,127
Do..... Mount.....	Geol. Survey of N. Y.....	4,000
Do.....	Adirondack Survey.....	3,596
Ephrata, Geodetic Station.....	N. Y. State Survey.....	1,029
Erie, Lake, water surface.....	U. S. Lake Survey.....	573
Erieville.....	S. & C. V. R. R.....	1,577
Erin.....	U., I. & E. R. R.....	1,249
Erwin Centre.....	Corning, C. & A. R. R.....	976
Erwin's.....	N. Y., L. E. & W. R. R.....	983
Erwin's Mill.....	N. Y., L. E. & W. R. R.....	1,409
Esperance.....	A. & S. R. R.....	769
Etna.....	U., I. & E. R. R.....	1,010
Evergreen Mountain, approx. (Catskills).....	Appal. Club.....	3,624
Fabius, Geodetic Station.....	N. Y. State Survey.....	2,020
Failing, Geodetic Station.....	N. Y. State Survey.....	821
Fairfield Academy, R. R. bench at labora- tory, Geodetic Station.....	N. Y. State Survey.....	1,281
Fair Ground.....	N. Y., L. E. & W. R. R.....	540
Fairmount, Geodetic Station.....	N. Y. State Survey.....	736

Station.	Authority.	Elevation.
		<i>Feet.</i>
port	N. Y. C. & H. R. R. R.	456
soner	D., A. V. & P. R. R.	1,258
kirk, Geodetic Station	U. S. Lake Survey	843
Brook	Corning, C. & A. R. R.	1,842
mer	G., I. & S. R. R.	860
nham	L. S. & M. S. R. R.	623
etteville	S. & C. V. R. R.	538
's Mills	U. & B. R. R. R.	620
ner, Geodetic Station	N. Y. State Survey	1,862
tonville	D., A. V. & P. R. R.	1,243
kill	N., D. & C. R. R.	213
ningville	S. C. R. R.	907
rida	N. Y., L. E. & W. R. R.	404
da	N. Y. C. & H. R. R. R.	299
estville	N. Y., L. E. & W. R. R.	883
ked Lake	Toner	1,704
t Edward	R. & S. R. R.	141
t Plain	N. Y. C. & H. R. R. R.	311
t Stanwix	U. S. C. & G. S.	9
Hollow	U. & D. R. R.	1,004
nkfort	N. Y. C. & H. R. R. R.	402
nklin Summit	N. Y. & O. R. R.	1,764
nkinton (Catskills)	Appal. Club	1,260
nklinville	B., N. Y. & P. R. R.	1,593
donia	D., A. V. & P. R. R.	765
ville, U., I. & E. R. R. crossing	S. C. R. R.	1,049
wsburg	D., A. V. & P. R. R.	1,261
ndship	N. Y., L. E. & W. R. R.	1,539
ton	O. & S. R. R.	387
tonham Church (Catskills)	Appal. Club	714
nsville	N. Y., L. E. & W. R. R.	1,407
nsville Summit	R. & S. L. R. R.	1,636
diner	W. V. R. R.	311
wood's	N. Y., L. E. & W. R. R.	1,283
port	N. Y. C. & H. R. R. R.	525
Do. Geodetic Station	U. S. Lake Survey	648
mard's	N. Y., L. E. & W. R. R.	784
esee	N. Y., L. E. & W. R. R.	1,526
esee Bridge	N. Y., L. E. & W. R. R.	548
esee Valley Junction	N. Y. C. & H. R. R. R.	543
esee	N. Y., L. E. & W. R. R.	600
eva	N. Y. C. & H. R. R. R.	459
rge, Lake	Toner	324
rgetown	S. & C. V. R. R.	1,450
man, Geodetic Station	N. Y. State Survey	994
nts of the Valley	Adirondack Survey	4,530
ertsville, Geodetic Station	N. Y. State Survey	521
oa Hotel (Catskills)	Appal. Club	1,036
s, Geodetic Station	N. Y. State Survey	1,265
adale	U. & B. R. R. R.	780
nda, Lake	N. Y., B. & M. R. R.	505
ham	N., D. & C. R. R.	213
a, The	Adir. R. R.	712
ersville	F., J. & G. R. R.	800
don Gap, road (Catskills)	Appal. Club	2,504
don Hill (Catskills)	Appal. Club	2,629
hen	N. Y., L. E. & W. R. R.	431
hic Mountain	Adirondack Survey	4,744
anda	B. & S. W. R. R.	776
ham Mountain, Dry Brook	Appal. Club	3,886
aby	O. & S. R. R.	390
ad Gorge	U. & D. R. R.	1,574
advew, Geodetic Station	N. Y. State Survey	420
ves Mountain	Adirondack Survey	2,345

Station.	Authority.	Elevation.
		<i>Feet.</i>
Gray Peak	Adirondack Survey	4,984
Great Bend	U. & B. R. R. R.	649
Great Valley	N. Y., L. E. & W. R. R.	1,393
Greenbush	U. S. C. & G. S.	26
Do	N. Y. C. & H. R. R. R.	24
Greene	U. C. & S. V. R. R.	916
Greenfield	Adirondack R. R.	564
Green's Corners	N. Y. C. & H. R. R. R.	466
Green, Geodetic Station	N. Y. State Survey	974
Greenwood	N. Y., L. E. & W. R. R.	530
Grenadier, Geodetic Station	U. S. Lake Survey	268
Grey Court	N. Y., L. E. & W. R. R.	432
Griffin's Corners	U. & D. R. R.	1,504
Griswold's	N. Y., L. E. & W. R. R.	1,044
Groton	S. C. R. R.	997
Groveville	N. D. & C. R. R.	177
Guilderland	A. & S. R. R.	329
Guilford Junction, New Berlin R. R.	N. Y. & O. R. R.	1,083
Gull Lake	State Survey of N. Y.	2,019
Hackensack River	N. Y., L. E. & W. R. R.	106
Hadley	Adirondack R. R.	606
Halcott Gap, summit road (Catskills)	Appal. Club	2,725
Halcott Mountain (Catskills)	Appal. Club	3,564
Halcottsville	U. & D. R. R.	1,403
Hale's Eddy	N. Y., L. E. & W. R. R.	980
Hallenback, Geodetic Station	N. Y. State Survey	638
Halsteads	P., H. & B. R. R.	596
Hamburg	B. & S. W. R. R.	800
Do... Geodetic Station	U. S. Lake Survey	598
Hamburg	L. S. & M. S. R. R.	635
Hamilton College, top of Chapel Dome, Geodetic Station	N. Y. State Survey	1,004
Hamilton's	N. Y., L. E. & W. R. R.	920
Hamlin	R., W. & O. R. R.	310
Hammond	U. & B. R. R. R.	346
Hampton	N. Y., L. E. & W. R. R.	430
Hancock	N. Y., L. E. & W. R. R.	926
Hankin's	N. Y., L. E. & W. R. R.	810
Harford	S. C. R. R.	1,186
Harlem River Station	N. Y., N. H. & H. R. R.	9
Harpersville	W. & S. R. R.	1,052
Harrington's Pond (Adirondacks)	Adirondack Survey	1,743
Havana	N. C. R. R.	447
Hayden Mountain (Catskills)	Appal. Club	2,900
Haystack Mountain	Adirondack Survey	5,007
Do	Adirondack Survey	4,855
Hayt's Corners	G., I. & S. R. R.	396
Helching's Pond	Adirondack Survey	1,697
Helsinger Notch (Catskills)	Appalachian Club	2,677
Henderson Lake	Adirondack Survey	1,838
Do	Toner	1,936
Do	Guyot	1,829
Henrietta	N. Y., L. E. & W. R. R.	564
Henson Gap, summit road (Catskills)	Appal. Club	1,989
Hensonville Cross-roads (Catskills)	Appal. Club	1,646
Herkimer	N. Y. C. & H. R. R. R.	398
Herkimer, Geodetic Station	N. Y. State Survey	507
High Bridge	N. Y. C. & N. R. R.	8
High Knob (Catskills)	Appal. Club	2,654
Highland Mills	N. Y., L. E. & W. R. R.	480
High Peak (Catskills)	Appal. Club	3,664
High Point (Catskills)	Appal. Club	3,098
Hilldale	N. Y. & H. R. R.	671
Hill's Branch	G., I. & S. R. R.	396

Station.	Authority.	Elevation.
		<i>Feet.</i>
Himrod's	N. C. R. R.	799
Hinsdale	N. Y., L. E. & W. R. R.	1,501
Hoffman Mountain	Adirondack Survey	3,723
Hoffman's	N. Y., C. & H. R. R. R.	266
Holland	B., N. Y. & P. R. R.	1,176
Holland Patent	U. & B. R. R. R.	630
Holley	N. Y., C. & H. R. R. R.	537
Holmes' Hill (Adirondacks)	Adirondack Survey	2,086
Holmesville	R. W. & O. R. R.	320
Homer	S. & B. R. R.	1,131
Honeoye	N. Y., C. & H. R. R. R.	777
Honey Pond (Adirondacks)	Adirondack Survey	1,644
Hooper	N. Y., L. E. & W. R. R.	839
Hopewell	N. C. R. R.	850
Do	N., D. & C. R. R.	252
Hornellsville	N. Y., L. E. & W. R. R.	1,161
Horseheads	N. C. R. R.	866
Do	U. I. & E. R. R.	899
Howell's	N. Y., L. E. & W. R. R.	699
Howe's Cave	A. & S. R. R.	782
Hewlett Hill, Geodetic Station	Gardiner	1,136
Hobbs, Geodetic Station	Gardiner	1,198
Hudson	U. S. C. & G. S.	8
Do	N. Y. C. & H. R. R. R.	4
Hunter Mountain (Catskills)	Appal. Club	4,038
Hunter Village, Rusk's Catskills	Appal. Club	1,609
Hunt's	N. Y., L. E. & W. R. R.	1,339
Hurricane Mountain	Adirondack Survey	3,763
Husteds	N., D. & C. R. R.	846
Hyndsville	A. & S. R. R.	1,112
Ilion	N. Y. C. & H. R. R. R.	400
Ilion, Geodetic Station	N. Y. State Survey	549
Indian Head, East peak (Catskills)	Appal. Club	3,340
Do	Appal. Club	3,510
Do	Appal. Club	3,581
Indian Lake (Adirondacks)	Adirondack Survey	1,669
Indian Pass (Adirondacks)	Adirondack Survey	2,902
Do	Appal. Club	2,694
Iodus, Geodetic Station	U. S. Lake Survey	598
Iron Works (Adirondacks)	Adirondack Survey	1,769
Irving	L. S. & M. S. R. R.	586
Ischua	B., N. Y. & P. R. R.	1,541
Ithaca	G., I. & S. R. R.	392
Do	C. & S. R. R.	377
Do	U., I. & E. R. R.	840
Jackson, Geodetic Station	N. Y. State Survey	1,420
Jamestown	A. & G. W. R. R.	1,321
Jamieson	B., N. Y. & P. R. R.	894
Janessville	S. & B. R. R.	591
Jessup's Landing	Adirondack R. R.	606
Johnston	F., J. & G. R. R.	659
Jordan	N. Y. C. & H. R. R. R.	406
Kasvay Summit	R. W. & O. R. R.	639
Kelley's Corner	U. & D. R. R.	1,378
Kennedy	A. & G. W. R. R.	1,264
Kimball Mountain (Catskills)	Appal. Club	3,960
Kinderhook	Boston & Albany R. R.	318
King's	Adirondack R. R.	588
King's Bridge	N. Y. C. & N. R. R.	8
King's Ferry	G., I. & S. R. R.	394
Kingsley, Geodetic Station	N. Y. State Survey	537
Kingston	W. V. R. R.	186
Kingston	U. & D. R. R.	159
Kirkland	Rome & C. R. R.	540

Station.	Authority.	Elevation.
Kirkville	N. Y. C. & H. R. R. R.	<i>Feet.</i> 423
Do.. Geodetic Station.....	N. Y. State Survey	507
Kirkwood	N. Y., L. E. & W. R. R.	876
Knowersville	A. & S. R. R.	459
La Fargeville	U. & B. R. R. R.	385
La Grange	N., D. & C. R. R.	357
Lake Ridge	G., I. & S. R. R.	401
Lake Station	W. V. R. R.	542
Lake View	L. S. & M. S. R. R.	709
Do	R. & L. O. R. R.	312
Lancaster	N. Y., L. E. & W. R. R.	683
Laona	N. Y., L. E. & W. R. R.	1,157
Lansingburg	U. S. C. & G. S.	33
Laona	D., A. V. & P. R. R.	810
La Salle	N. Y., L. E. & W. R. R.	572
Lawrenceville	Corning, C. & A. R. R.	1,006
Lebanon	S. & C. V. R. R.	1,336
Leonard Hill (Catskills)	Appal. Club	2,649
Le Roy	N. Y., L. E. & W. R. R.	872
Levant, grade, crossing D., A. V. & P. R. R.	A. & G. W. R. R.	1,267
Lewey Lake	Adirondack Survey	1,702
Do	Geol. Survey of N. Y.	1,738
Do	Adirondack Survey	3,904
Lewiston	N. Y. C. & H. R. R. R.	358
Lexington Mountain, approx. (Catskills) ..	Appal. Club	2,930
Leyden	U. & B. R. R. R.	990
Liberty	N. Y., L. E. & W. R. R.	1,293
Lime Rock	R. & S. L. R. R.	777
Limestone	N. Y., L. E. & W. R. R.	1,416
Linden	N. Y., L. E. & W. R. R.	1,181
Lindley	Corning, C. & A. R. R.	977
Lipp's	N. Y., L. E. & W. R. R.	390
Little Falls	N. Y. C. & H. R. R. R.	376
Little Falls, Geodetic Station	Y. Y. State Survey	797
Little Tupper's Lake	Adirondack Survey	1,504
Little Valley	N. Y., L. E. & W. R. R.	1,584
Livingstonville (Catskills)	Appal. Club	1,100
Livonia	N. Y., L. E. & W. R. R.	1,030
Locke	S. C. R. R.	799
Lockport	N. Y. C. & H. R. R. R.	600
Lockport Junction	L. & B. R. R.	628
Lockwood Gap (Catskills)	Appal. Club	3,446
Lone Mountain (Catskills)	U. & B. R. R. R.	3,670
Long Lake	Geol. Survey of N. Y.	1,620
Do	Geol. Survey of N. Y.	1,575
Do	Adirondack Survey	1,584
Long Pond	Adirondack Survey	1,573
Do	Adirondack Survey	1,925
Long Pond Mountain	Adirondack Survey	2,269
Do	Adirondack Survey	2,232
Long Tour	Adirondack Survey	2,604
Lordville	N. Y., L. E. & W. R. R.	867
Loring's	C., C. & De R. R. R.	1,115
Lost Lake	Geol. Survey of N. Y.	1,761
Lower Saranac Lake	Geol. Survey of N. Y.	1,527
Ludlowville	G., I. & S. R. R.	396
Lyon Mountain	Chat. R. R.	1,918
Lyons	N. Y. C. & H. R. R. R.	407
Lyons Falls	U. & B. R. R. R.	845
Macedon	N. Y. C. & H. R. R. R.	471
Machias	B., N. Y. & P. R. R.	1,656
Do, junction with B. N. Y. & P. R. R.	R. & S. L. R. R.	1,646
McIntyre	P. H. & B. R. R.	432

Station.	Authority.	Elevation.
		<i>Feet.</i>
lcIntyre, Mount	Geol. Survey of N. Y.	5,183
lcLean	U. I. & E. R. R.	1,090
lcKinney's	G. I. & S. R. R.	396
lcMartin, Mount	Geol. Survey of N. Y.	5,000
lcNair's	N. Y., L. E. & W. R. R.	576
lacomb's Mountain	Adirondack Survey	4,371
lahopac	N. Y. C. & N. R. R.	641
Do. Lake	N. Y., B. & M. R. R.	661
lague's Corners (Catskills)	Appal. Club	1,964
lalloryville	U., I. & E. R. R.	1,057
lanlius	N. Y. C. & H. R. R. R.	416
Do.	S. & C. V. R. R.	742
lanlius Centre	S. & C. V. R. R.	435
lansville, Geodetic Station	U. S. Lake Survey	725
lanorkill (Catskills)	Appal. Club	1,520
lapletown, Geodetic Station	N. Y. State Survey	1,214
larathon	S. & B. R. R.	1,026
larcy	U. & B. R. R. R.	567
Do. Mount	Adirondack Survey	5,403
Do. do.	Guyot	5,379
Do. do.	Adirondack Survey	5,334
Do. do. Timber line on .....	.....	4,851
lartinsburg	U. & B. R. R. R.	760
lartville	S. C. R. R.	367
laryland	A. & S. R. R.	1,220
lason, Lake	Geol. Survey of N. Y.	1,860
Do.	Adirondack Survey	1,824
latticewan	U., D. & C. R. R.	119
laxham, Mount	Adirondack Survey	2,511
Do.	Adirondack Survey	2,474
layfield	F., J. & G. R. R.	759
layville	B., C. & P. R. R.	1,300
ledina	N. Y. C. & H. R. R. R.	545
lemphis	N. Y. C. & H. R. R. R.	410
lerritt's Corners	N. Y. C. & N. R. R.	346
lerry, Geodetic Station	N. Y. State Survey	1,328
lexico	R., W. & Og. R. R.	375
fiddleburg Railroad depot (Catskills)	Appal. Club	640
fiddletown	N. Y., L. E. & W. R. R.	562
fillbrook	N., D. & C. R. R.	566
filler's Corners	N. Y. C. & H. R. R. R.	896
fillerton	N. Y. & H. R. R.	702
filo	N. C. R. R.	857
Do. Geodetic Station	N. Y. State Survey	1,343
finchell's	N., D. & C. R. R.	966
fine Hill (Catskills)	Appal. Club	2,810
finetto	O. & S. R. R.	334
fineville (Adirondacks)	Adirondack Survey	1,338
fink Mountain (Catskills)	Appal. Club	3,807
fitchell, Geodetic Station	N. Y. State Survey	881
fonkey Hill (Mucky) (Catskills)	Appal. Club	2,489
fonsey	N. Y., L. E. & W. R. R.	523
fontgomery	N. Y., L. E. & W. R. R.	386
foon Lake	Toner	1,772
foon's	D., A. V. & P. R. R.	1,303
foore's	N., D. & C. R. R.	439
foose Lake	Geol. Survey of N. Y.	2,239
Do.	Adirondack Survey	2,203
foravia	S. C. R. R.	732
foransville, Geodetic Station	U. S. Lake Survey	885
forian's	L. S. & M. S. R. R.	627
forris Dock	N. Y. C. & N. R. R.	9
forrissonville	Chat. R. R.	449
forristown	U. & B. R. R. R.	258

Station.	Authority.	Elevation.
		<i>Feet.</i>
Moss Lake	Geol. Survey of N. Y.	4,312
Moth's Corners	U., I. & E. R. R.	945
Mountainville	N. Y., L. E. & W. R. R.	290
Mount Morris	N. Y., L. E. & W. R. R.	595
Mud Lake	Geol. Survey of N. Y.	1,747
Do...Lake	Adirondack Survey	1,738
Mumford	R. & S. L. R. R.	618
Munn Davis, Geodetic Station	N. Y. State Survey	538
Munroe	N. Y., L. E. & W. R. R.	696
Murrey	N. Y. C. & H. R. R. R.	563
Nannet	N. Y., L. E. & W. R. R.	284
Narrowsburg	N. Y., L. E. & W. R. R.	720
Neely Town	N. Y., L. E. & W. R. R.	380
Nellis, Geodetic Station	N. Y. State Survey	568
Newark	N. Y. C. & H. R. R. R.	418
Newark Valley	S. C. R. R.	966
Newburgh	N. Y., L. E. & W. R. R.	95
Do	N. Y., W. S. & B. R. R.	11
Newburgh Junction	N. Y., L. E. & W. R. R.	521
Newcombe, Lake	Toner	1,636
Newfield	G., I. & S. R. R.	527
New Haven	R. W. & O. R. H.	306
New Milford	W. V. R. R.	452
New Platz	W. V. R. R.	266
Newport	R. & L. O. R. R.	396
New Rochelle	N. Y. & N. H. R. R.	70
New Scotland	A. & S. R. R.	327
New Windsor	N. Y., L. E. & W. R. R.	192
New York, junction of Chatham street and Broadway	N. Y. & N. H. R. R.	34
Do...27th street depot	N. Y. & N. H. R. R.	37
Do...42d street depot (Grand Central)	N. Y. & N. H. R. R.	52
Do...Harlem Bridge	N. Y. & N. H. R. R.	12
Do...Chambers street	N. Y. C. & H. R. R. R.	22
Do...Signal Station	U. S. Signal Office	164
Do...Manhattan Gas Works (18th st.)	U. S. C. & G. S.	15
Niagara Falls	N. Y. C. & H. R. R. R.	574
Niger, Lake	Geol. Survey of N. Y.	1,842
Niles, Geodetic Station	N. Y. State Survey	1,023
Nineveh Junction	A. & S. R. R.	1,032
Nipple Top	Geol. Survey of N. Y.	4,900
Do	Adirondack Survey	4,684
Nobody's	N. Y., L. E. & W. R. R.	748
North Beacon	Guyot	1,471
North Collins	B. & S. W. R. R.	846
North Creek	Adir. R. R.	976
North Mountain, East Peak (Catskills)	Appal. Club	3,285
Do...Outlook (Catskills)	Appal. Club	3,100
Do...W. Stoppel (Catskills)	Appal. Club	3,440
North River Mountain (Adirondacks)	Geol. Survey of N. Y.	3,600
Do...do	Adirondack Survey	3,759
Do...do	Adirondack Survey	3,722
Northville	F., J. & G. R. R.	770
North Yonkers	N. Y. C. & N. R. R.	164
Norton's	D., A. V. & P. R. R.	991
Do	G., I. & S. R. R.	404
Norwich	U., C. & S. R. R.	1,001
Nunda	N. Y., L. E. & W. R. R.	1,336
Odells	N. Y. C. & N. R. R.	119
Ogdensburg	U. & B. R. R. R.	246
Olean	N. Y., L. E. & W. R. R.	1,438
Olive Branch	U. & D. R. R.	504
Olympus, Geodetic Station	Gardiner	621
Oneida	N. Y. C. & H. R. R. R.	440

Station.	Authority.	Elevation.
		<i>Feet.</i>
Oneida.....	N. Y. & Oswego Mid. R. R...	419
Oneida, Lake	Toner	360
Oneota.....	A. & S. R. R	1,087
Ontario Lake	U. S. Lake Survey	247
Ontario	R., W. & O. R. R.	415
Orangeburg	N. Y., L. E. & W. R. R ..	67
Orange Farm	N. Y., L. E. & W. R. R ..	406
Oriakany	N. Y. C. & H. R. R. R.	423
Osborne Hollow	A. & S. R. R	1,115
Ostranda, Geodetic Station	N. Y. State Survey	1,274
Oswego	O. & S. R. R	293
Do.....	R., W. & O. R. R.	280
Do.....	N. Y. & O. R. R	301
Do, Geodetic Station	U. S. Lake Survey	418
Do, Junction	S. C. R. R	316
Do, Signal Station	U. S. Signal Office.....	304
Otisville	N. Y., L. E. & W. R. R ..	870
Otsego Lake	A. & S. R. R	1,054
Otter Lake	Toner	2,208
Oulaska Pass (Adirondacks)	Adirondack Survey	3,050
Onaquaga	A. & S. R. R	991
Oven Lake	Geol. Survey of N. Y.	2,025
Overlook Mountain (Catskills)	Appal. Club	3,150
Ovid Centre.....	G., I. & S. R. R	819
Owasco Lake, water-surface	S. C. R. R	713
Owego	N. Y., L. E. & W. R. R ..	822
Owl's Head	Adirondack Survey	2,825
Owl's Head Mountain (Adirondacks)	Adirondack Survey	2,789
Oxford	N. Y., L. E. & W. R. R ..	540
Do.....	U., C. & S. R. R.	980
Painted Post	N. Y., L. E. & W. R. R ..	945
Palatine Bridge	N. Y. C. & H. R. R. R.	304
Palenville Overlook (Catskills)	Appal. Club	1,660
Palenville Union Church (Catskills)	Appal. Club	470
Palmyra	N. Y. C. & H. R. R. R.	434
Do., Geodetic Station	U. S. Lake Survey	669
Pauama	B., C. & P. R. R.	1,545
Pantherkill Mountain (Catskills)	Appal. Club	3,828
Paris	U., C. & S. V. R. R	1,422
Parish	R., W. & O. R. R.	474
Parker Hill, Star Rock (Catskills)	Appal. Club	2,545
Parker Notch (Catskills)	Appal. Club	2,415
Park Station	U., I. & E. R. R	1,515
Pavilion	R. & S. L. R. R	940
Peak-o-Moose (Catskills)	Appal. Club	3,875
Pearl Creek	R. & S. L. R. R	988
Peekskill	U. S. C. & G. S	7
Pekin, Geodetic Station	U. S. Lake Survey	661
Pennysan	N. C. R. R	756
Perrysburgh	N. Y., L. E. & W. R. R ..	1,260
Perryville	C., C. & De R. R. R	1,041
Persia	N. Y., L. E. & W. R. R ..	1,350
Petersburg Mountain	Appal. Club	2,534
Petersburg Pass	Appal. Club	2,075
Philadelphia	U. & B. R. R. R.	485
Phillipville	N. Y., L. E. & W. R. R ..	1,390
Phoenicia	U. & D. R. R	796
Piermont	N. Y., L. E. & W. R. R ..	6
Pike	R. & S. L. R. R	1,673
Pine Hill (Catskills)	Appal. Club	1,512
Pinehill	N. Y., K. & S. R. R	1,889
Do.....	N. & D. R. R	1,679
Pine Island	N. Y., L. E. & W. R. R ..	406
Pine Island Mountain, approx. (Catskills) ..	Appal. Club	3,086

Station.	Authority.	Elevation.
		<i>Feet.</i>
Pine Plains	P., H. & B. R. R.	470
Pine Valley	N. C. R. R.	865
Pinnacle Hill, Geodetic Station	U. S. Lake Survey	752
Pisco, Lake	Toner	1,648
Pisgah (Catskills)	Appal. Club	2,905
Pittsfield Summit	N. Y., K. & S. R. R.	1,568
Plaaterkill Mountain (Catskills)	Appal. Club	3,280
Placid Lake	State Survey of N. Y.	1,991
Do	Adirondack Survey	1,950
Platt Creek Church (Catskills)	Appal. Club	1,683
Plattsburgh	Chat. R. R.	119
Pleasant Lake (Adirondacks)	Toner	1,706
Do	Adirondack Survey	1,579
Pleasant Mountain	U. & D. R. R.	609
Pleasant Valley	P., H. & B. R. R.	199
Point of Rocks (Catskills)	Appal. Club	2,178
Poland	A. & G. W. R. R.	1,269
Poolville	U., C. & S. B. R. R.	1,099
Portage	N. Y., L. E. & W. R. R.	1,314
Port Bryan	N. Y. C. & H. R. R. R.	406
Port Crane	A. & S. R. R.	1,041
Port Jervis	N. Y., L. E. & W. R. R.	442
Port Leyden	U. & B. R. R.	900
Portville	B., N. Y. & P. R. R.	1,442
Post Creek P. O.	S., G. & C. R. R.	1,187
Poughkeepsie	U., S. C. & G. S.	42
Do	P., H. & B. R. R.	179
Do	N. Y. C. & H. R. R. R.	139
Prattsville Hotel (Catskills)	Appal. Club	1,164
Preble	S. & B. R. R.	1,183
Preston Hollow (Catskills)	Appal. Club	870
Prospect	B., C. & P. R. R.	1,221
Do .. (Center Peak)	Appal. Club	2,591
Prospect, Geodetic Station	N. Y. State Survey	1,280
Prospects	U. & B. R. R. R.	1,010
Protection	B., N. Y. & P. R. R.	1,383
Puffer Pond (Adirondacks)	Adirondack Survey	2,193
Pulaski	R., W. & O. R. R.	377
Rafinesque Mountain (Adirondacks)	U. S. C. & G. S.	1,186
Raft Hill	Adirondack Survey	2,105
Ragged Mountain	Adirondack Survey	4,163
Do	Adirondack Survey	4,127
Do	by level (Adirondacks) ..	
Ramapo	N. Y., L. E. & W. R. R.	310
Randolph	A. & G. W. R. R.	1,318
Rathbonville	N. Y., L. E. & W. R. R.	1,015
Raven Hill	Adirondack Survey	1,982
Reaman, Geodetic Station	N. Y. State Survey	799
Red Creek	N. Y., L. E. & W. R. R.	525
Redfalls P. O. (Catskills)	Appal. Club	1,270
Redfield, Mount	Adirondack Survey	4,688
Red House	A. & G. W. R. R.	1,353
Remson	U. & B. R. R. R.	1,185
Redwood	U. & B. R. R. R.	366
Richford	S. C. R. R.	1,097
Rich Lake	Geol. Survey of N. Y.	1,547
Richland Junction	R., W. & O. R. R.	523
Richmond	R., W. & O. R. R.	524
Richmond Cone (Catskills)	Appal. Club	3,202
Richmondville	A. & S. R. R.	1,173
Richville	N. Y. C. & H. R. R. R.	828
Rift Hill	Adirondack Survey	2,141
Riga Mountain	P., H. & B. R. R.	779
Ripley	L. S. & M. S. R. R.	750
Ripley crossing	L. S. & M. S. R. R.	736

Station.	Authority.	Elevation.
		<i>Feet.</i>
Ripley Hill, Geodetic Station	N. Y. State Survey	1,968
Riverside	Adirondack Survey	815
Rochester	N. Y. C. & H. R. R. R.	508
Do... at Norton Station	R. & L. O. R. R.	448
Do... at Ridge Road	R. & L. O. R. R.	428
Do... Signal Station	U. S. Signal Office	587
Do... Forest House	R. & L. O. R. R.	428
Rock Run	N. Y., L. E. & W. R. R.	787
Rome	N. Y. C. & H. R. R. R.	445
Do. Geodetic Station	N. Y. State Survey	506
Romulus	G., I. & S. R. R.	719
Rondout	U. & D. R. R.	6
Rosendale	W. V. R. R.	187
Rose Notch	Appal. Club	2,743
Rossie	U. & B. R. R. R.	326
Ross Mill	D., A., V. & P. R. R.	1,262
Round Lake (Adirondacks)	Adirondack Survey	1,866
Round Top (Catakills)	Appal. Club	3,500
Roxbury	U. & D. R. R.	1,501
Rush	N. Y., L. E. & W. R. R.	541
Rusk Mountain (Catakills)	Appal. Club	3,626
Russell	P. H. & B. R. R.	227
Ryesdorph, Geodetic Station	N. Y. State Survey	411
Saddle Mountain	Adirondack Survey	4,536
Saint Johnsville	N. Y. C. & H. R. R. R.	319
Salamanca	N. Y., L. E. & W. R. R.	1,384
Do... Erie R. R. Junction	R. & S. L. R. R.	1,397
Salisbury	N. Y., L. E. & W. R. R.	312
Salmon Lake	Geol. Survey of N. Y.	1,756
Salt Point	P. H. & B. R. R.	249
Sampson's	O. & S. R. R.	400
Sandford Lake (Adirondacks)	Adirondack Survey	1,685
Do	Guyot	1,731
Do	Geol. Survey of N. Y.	1,722
Sand Hill	R., W. & O. R. R.	313
Sand Lake	Toner	1,793
Sandy Creek, Geodetic Station	U. S. Lake Survey	486
Do	R., W. & O. R. R.	559
Santanoni Mountain	Adirondack Survey	4,644
Santees	N. Y., L. E. & W. R. R.	1,065
Saranac	Chat. R. R.	1,488
Saranac Lake (lower)	Geol. Survey of N. Y.	1,557
Saranac Lake (upper)	Geol. Survey of N. Y.	1,606
Saratoga, station D. & H. C. R. R.	City Engineer	265
Do	City Engineer	265
Do	R. & S. R. R.	304
Savannah	G., I. & S. R. R.	407
Savona	N. Y., L. E. & W. R. R.	1,053
Schnectady	N. Y. C. & H. R. R. R.	246
Schenevus	A. & S. R. R.	1,272
Schodack	Bost. & Albany R. R.	208
Schoharie	A. & S. R. R.	610
Schoharie (east peak, Catakills)	Appal. Club	3,583
Do... (west peak, Catakills)	Appal. Club	3,650
Schuyler Lake	Toner	1,200
Schuyler, Geodetic Station	N. Y. State Survey	1,582
Scio	N. Y., L. E. & W. R. R.	1,460
Scipio	S. C. R. R.	730
Scoots' Ponds, No. 1 (Adirondacks)	Adirondack Survey	3,055
Do... No. 2 (Adirondacks)	Adirondack Survey	3,132
Scootsville	N. Y., L. E. & W. R. R.	558
Do... Geodetic Station	U. S. Lake Survey	796
Scriba	R., W. & O. R. R.	329
Scroon Mountain	Geol. Survey of N. Y.	3,200

Station.	Authority.	Elevation.
		<i>Feet.</i>
Seeley, Geodetic Station	N. Y. State Survey	1,109
Seneca Lake	Geol. Survey of N. Y.	370
Do.	G., I. & S. R. R.	445
Do.	S., G. & C. R. R.	447
Seward	A. & S. R. R.	1,177
Seward Mountain (Adirondacks)	Adirondack Survey	4,319
Do.	Adirondack Survey	4,385
Seymore, Mount.	Adirondack Survey	3,929
Shakers	N. Y., L. E. & W. R. R.	574
Shandaken	U. & D. R. R.	1,072
Sharon	A. & S. R. R.	1,353
Shawangunk	W. V. R. R.	277
Shed's Corners	C., C. & De R. R. R.	1,383
Shekomeko	U., D. & C. R. R.	667
Sheridan	L. S. & M. S. R. R.	664
Do.	N. Y., L. E. & W. R. R.	760
Sherman	B. C. & P. R. R.	1,508
Sherwood, Geodetic Station	N. Y. State Survey	799
Shoemaker, Geodetic Station	N. Y. State Survey	1,372
Shokan	U. & D. R. R.	537
Shurtleff's	U. & B. R. R. R.	416
Sidney	A. & S. R. R.	990
Sidney Centre	N. Y. & O. R. R.	997
Do. Plains	N. Y. & O. R. R.	1,393
Silver Creek	L. S. & M. S. R. R.	623
Do. Geodetic Station	U. S. Lake Survey	726
Silver Lake	Geol. Survey of N. Y.	1,983
Do. Mountain	Adirondack Survey	2,604
Sinclairville	D., A. V. & P. R. R.	1,330
Sing Sing	N. Y. C. & H. R. R. R.	9
Sister Knob (Catskills)	Appal. Club	3,002
Skaneateles, Lake	Toner	932
Skidmore	D., A. V. & P. R. R.	1,317
Skylight Mountain	Adirondack Survey	4,978
Slide Mountain (Catskills)	Appal. Club	4,205
Slingerlands	A. & S. R. R.	214
Sloatsburgh	N. Y., L. E. & W. R. R.	350
Smithsborough	N. Y., L. E. & W. R. R.	799
Smith's Lake	Geol. Survey of N. Y.	1,775
Do. (Adirondacks)	Adirondack Survey	1,738
Smith's Mills	N. Y., L. E. & W. R. R.	1,010
Smith's Valley	U., C. & B. R. R.	1,140
Smithton (Catskills)	Appal. Club	1,268
Snowy Mountain	Adirondack Survey	3,804
Do. (Adirondacks)	Adirondack Survey	3,860
Snyder's	U. I. & E. R. R.	995
Sodus	R., W. & O. R. R.	430
Somerset	R., W. & O. R. R.	332
Sonyea	N. Y., L. E. & W. R. R.	592
Sorrell Hill, Geodetic Station	N. Y. State Survey	641
South Avon	N. Y., L. E. & W. R. R.	620
Do.	N. Y., L. E. & W. R. R.	725
South Corinth	Adirondack Survey	606
South Cortland	U., I. & E. R. R.	1,151
South Dover	N. Y. & H. R. R.	415
South Durham	Appal. Club	969
Southfield	N. Y., L. E. & W. R. R.	491
South Livonia	N. Y., L. E. & W. R. R.	1,167
South McIntyre Mountain	Adirondack Survey	4,938
South Mountain (Adirondacks)	Adirondack Survey	1,917
Do. near Mountain House (Catskills)	Appal. Club	2,497
South Wales	B., N. Y. & P. R. R.	991
South Yonkers	N. Y. C. & N. R. R.	145

Station.	Authority.	Elevation.
		<i>Feet.</i>
Speculator Mountain.....	Adirondack Survey.....	3,041
Do.....	Adirondack Survey.....	3,006
Spencer.....	U. I. & E. R. R.....	998
Do.....	G. I. & S. R. R.....	1,006
Spencerport.....	N. Y. C. & H. R. R. R.....	530
Sprakers.....	N. Y. C. & H. R. R. R.....	301
Spring Brook.....	B. N. Y. & P. R. R.....	757
Spring Valley.....	N. Y. L. E. & W. R. R.....	450
Spring Water.....	N. Y. L. E. W. R. R.....	1,370
Sprucetop (Catskill).....	Appal. Club.....	3,567
Stafford.....	N. Y. C. & H. R. R. R.....	894
Do.....	N. Y. L. E. & W. R. R.....	910
Stamford.....	U. & D. R. R.....	1,771
Stanfordville.....	P. H. & B. R. R.....	323
Stanley, junction with O. & S. R. R.....	N. C. R. R.....	904
Starkey.....	N. C. R. R.....	810
Starr Hill, Geodetic Station.....	N. Y. State Survey.....	1,793
State Line, N. Y. & Mass.....	P. H. & B. R. R.....	784
State Line Junction, with extension of Tioga R. R.....	N. C. R. R.....	909
State Line, Mass. and N. Y.....	Bost. & Albany R. R.....	914
Steamburgh.....	A. & G. W. R. R.....	1,404
Sterlingville.....	U. & B. R. R.....	580
Stiles.....	O. & S. R. R.....	373
Stissing.....	P. H. & B. R. R.....	388
Do Junction.....	U. D. & C. R. R.....	437
Stittville.....	U. & B. R. R.....	560
Stockport.....	N. Y. L. E. & W. R. R.....	896
Stony Creek.....	Adir. R. R.....	569
Stony Hollow.....	U. & D. R. R.....	419
Stony Mountain, east end (Catskills).....	Appal. Club.....	3,844
Stony Point, Geodetic Station.....	U. S. Lake Survey.....	276
Stony Ponds.....	Geol. Survey of N. Y.....	1,536
Strattons.....	G. I. & S. R. R.....	654
Strykersville (Catskills).....	Appal. Club.....	1,215
Sturgeon Point, Geodetic Station.....	U. S. Lake Survey.....	611
Stuyvesant.....	U. S. C. & G. S.....	20
Sufferns.....	N. Y. L. E. & W. R. R.....	298
Summerdale.....	B. C. & P. R. R.....	1,629
Summit.....	N. Y. L. E. & W. R. R.....	1,373
Summit Hill.....	N. Y. K. & S. R. R.....	1,613
Sunset Rock (Catskills).....	Appal. Club.....	2,115
Suspension Bridge.....	N. Y. C. & H. R. R. R.....	580
Sutton Gap, road (Catskills).....	Appal. Club.....	2,235
Sutton Hill (Catskills).....	Appal. Club.....	2,573
Swains.....	N. Y. L. E. & W. R. R.....	1,313
Swartwood.....	U. I. & E. R. R.....	1,059
Syracuse.....	N. Y. C. & H. R. R. R.....	403
Table Mountain (Catskills).....	Appal. Club.....	3,865
Tahawas (Marcy).....	Adirondack Survey.....	5,403
Tallman.....	N. Y. L. E. & W. R. R.....	480
Tanners.....	P. H. & B. R. R.....	694
Tanner Geodetic Station.....	N. Y. State Survey.....	755
Tannersville Hotel (Catskills).....	Appal. Club.....	1,926
Tarrytown Heights.....	N. Y. C. & N. R. R.....	387
Tassel, Geodetic Station.....	N. Y. State Survey.....	1,948
Taughannock.....	G. I. & S. R. R.....	411
Taylor's Mountain.....	Geol. Survey of N. Y.....	4,500
Tear of the Clouds, Lake.....	Geol. Survey of N. Y.....	4,327
Teller, Geodetic Station.....	N. Y. State Survey.....	407
Thresa.....	U. & B. R. R. R.....	341
Thresa Junction.....	U. & B. R. R. R.....	405
Thirteenth Pond (Adirondacks).....	Adirondack Survey.....	1,652
Thurman.....	Adir. R. R.....	5-5

Station.	Authority.	Elevation.
		<i>Feet.</i>
Tilly Foster.....	N. Y. C. & N. R. R.	401
Tioga.....	N. Y., L. E. & W. R. R.	505
Tip Top Summit.....	N. Y., L. E. & W. R. R.	1,783
Tivoli.....	U. S. C. & G. S.	9
Tonawanda.....	N. Y. C. & H. R. R. R.	580
Do.....Geodetic Station	U. S. Lake Survey	628
Tower Mountain (Catskills).....	Appal. Club	2,931
Towners.....	N. Y. & H. R. R.	432
Town Line.....	N. Y., L. E. & W. R. R.	742
Traver Geodetic Station.....	N. Y. State Survey	236
Treeville.....	U., I. & E. R. R.	1,030
Trenton Falls.....	U. & B. R. R. R.	840
Treys.....	N. Y., L. E. & W. R. R.	872
Tribes Hill.....	N. Y. C. & H. R. R. R.	305
Troy.....	N. Y. C. & H. R. R. R.	16
Do.....	R. & S. R. R.	30
Trumansburg.....	G., I. & S. R. R.	678
Truxton.....	C., C. & De R. R. R.	1,135
Tully, Lake.....	Toner	1,200
Tupper's Lake.....	Geol. Survey of N. Y.	1,554
Do.....	Adirondack Survey	1,504
Turk's Hill, Geodetic Station.....	U. S. Lake Survey	931
Turners.....	N. Y., L. E. & W. R. R.	556
Unadilla.....	A. & S. R. R.	1,022
Undercliff (Catskills).....	Appal. Club	2,200
Union.....	N. Y., L. E. & W. R. R.	840
Union Springs.....	G., I. & S. R. R.	394
Upper Preston Pond (Adirondacks).....	Adirondack Survey	2,170
Upper Saranac Lake.....		1,367
Utica.....	N. Y. C. & H. R. R. R.	410
Do.....	U., C. & B. R. R.	446
Do.....	Erie Canal	428
Utsyantha Mt. (Catskills).....	Appal. Club	3,203
Vails Gate.....	N. Y., L. E. & W. R. R.	283
Do.....Junction	N. Y., L. E. & W. R. R.	280
Valley.....	N. Y., L. E. & W. R. R.	300
Van Courtland.....	N. Y. C. & N. R. R.	20
Vandalia.....	N. Y., L. E. & W. R. R.	1,415
Van Denburgh, Geodetic Station.....	N. Y. State Survey	264
Vanettersville.....	G., I. & S. R. R.	1,010
Vanderzee, Geodetic Station.....	G., I. & S. R. R.	158
Van Etten.....	U., I. & E. R. R.	1,012
Van Hoesen.....	Boston & Albany R. R.	243
Van Wagner's.....	P., H. & B. R. R.	242
Van Wie, Geodetic Station.....	N. Y. State Survey	28
Vedder, Geodetic Station.....	N. Y. State Survey	1,051
Verbank.....	U., D. & C. R. R.	553
Do...Village	U., D. & C. R. R.	522
Vermont.....	D., A. V. & P. R. R.	1,295
Verona.....	N. Y. C. & H. R. R. R.	467
Verplanck.....	U. S. C. & G. S.	34
Victory, Geodetic Station.....	U. S. Lake Survey	576
Do.....	N. Y. State Survey	568
Vienna, Geodetic Station.....	N. Y. State Survey	568
Vlaic, or Fly Mountain (Catskills).....	Appal. Club	3,531
Walden.....	W. V. R. R.	351
Wallace.....	N. Y., L. E. & W. R. R.	1,235
Wallface Mountain.....	Adirondack Survey	3,893
Do.....top (Adirondacks).....	Adirondack Survey	3,857
Wallkill Valley Junction.....	U. & D. R. R.	188
Walton.....	N. Y. & O. R. R.	1,239
Walworth, Geodetic Station.....	U. S. Lake Survey	656
Warner Pass.....	N. Y., K. & S. R. R.	1,953
Warner's.....	N. Y., C. & H. R. R. R.	427

Station.	Authority.	Elevation.
		<i>Feet.</i>
Warsaw	R. & S. L. R. R.	1,150
Do	N. Y., L. E. & W. R. R.	1,396
Warwick	W. V. R. R.	502
Washingtonville	N. Y., L. E. & W. R. R.	310
Waterboro	A. & G. W. R. R.	1,276
Waterport	R. W. & O. R. R.	349
Watertown	U. & B. R. R.	455
Do Junction	R. W. & O. R. R.	403
Waterville	U. C. & S. R. R.	1,238
Watkins	N. C. R. R.	453
Do	S. G. & C. R. R.	1,020
Watts' Flats	A. & G. W. R. R.	1,456
Waverly	N. Y., L. E. & W. R. R.	836
Wayland	N. Y., L. E. & W. R. R.	1,387
Wayland Summit	N. Y., L. E. & W. R. R.	1,415
Webster's	N. Y., L. E. & W. R. R.	1,348
Weedsport	N. Y. C. & H. R. R. R.	404
Weedsport Depot	S. C. R. R.	429
Do crossing N. Y. C. & H. R. R. R. (grade)	S. C. R. R.	404
Do crossing S. C. R. R. (grade)	S. C. R. R.	425
Do crossing Erie Canal (grade)	S. C. R. R.	406
Wellsbridge	A. & S. R. R.	1,049
Wellsburgh	N. Y., L. E. & W. R. R.	831
West Albany	N. Y. C. & H. R. R. R.	196
West Danby	G., I. & S. R. R.	872
West Durham (Catskills)	Appal. Club	1,884
West Fayette	G., I. & S. R. R.	609
Westfield	L. S. & M. S. R. R.	697
Do .. Geodetic Station	U. S. Lake Survey	1,479
West Hurley	U. & D. R. R.	534
West Jewett Mountain (Catskills)	Appal. Club	3,025
West Junction	N. Y., L. E. & W. R. R.	920
Westkill Village (Catskills)	Appal. Club	1,538
Westmoreland	R. & C. R. R.	528
West Rush	N. Y. C. & H. R. R. R.	562
West Saugerties (quarry bank)	Appal. Club	660
West Somers	N. Y. C. & N. B. R.	517
Wheatland	R. N. & P. R. R.	590
Whiteface Mountain	Geol. Survey of N. Y.	4,900
Do	Adirondack Survey	4,955
White Church	U., I. & E. R. R.	958
Whitehall	R. & S. R. R.	115
White House	N. Y., L. E. & W. R. R.	1,530
White Plains	N. Y. & H. R. R.	202
Whiteport	W. V. R. R.	189
Whitesboro	N. Y. C. & H. R. R. R.	415
Windsor	A. & S. R. R.	942
Willett's Point	G., I. & S. R. R.	405
Willett, Geodetic Station	N. Y. State Survey	894
Williams, Geodetic Station	N. Y. State Survey	1,163
Williamston	R., W. & O. R. R.	604
Willow Brook	P., H. & B. R. R.	351
Wileysville	U., I. & E. R. R.	940
Wilmington Village (Adirondacks)	Adirondack Survey	1,022
Wilson	R., W. & O. R. R.	300
Windham Centre Hotel (Catskills)	Appal. Club	1,510
Windham High Peak (Catskills)	Appal. Club	3,534
Wolcott	R., W. & O. R. R.	360
Wolfe, Geodetic Station	U. S. Lake Survey	308
Woodbury	N. Y., L. E. & W. R. R.	442
Woodhull Lake	Toner	2,019
Woodstock	C., C. & De R. R. R.	1,295
Woodstock Hotel (Catskills)	Appal. Club	594

Station.	Authority.	Elevation.
		<i>Feet.</i>
Worcester	A. & B. R. R.	1,319
Wyckoff's	S. C. R. R.	736
Wyoming	R. & S. L. R. R.	965
Yellow Pine, Geodetic Station	N. Y. State Survey	460
York Centre	R. M. & P. R. R.	780
Yorkshire	B., N. Y. & P. R. R.	1,458
Yorktown	N. Y. C. & N. R. R.	439
Yost's	N. Y. C. & H. R. R. R.	300
Yule, Geodetic Station	N. Y. State Survey	1,683

NORTH CAROLINA.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Alexander, Mount.....	Guyot.....	6,447
Amos Plott's Balsam.....	Guyot.....	6,278
Anderson.....	U. S. C. & G. S.....	1,547
Apex.....	R. & A. A. L. R. R.....	508
Argyle.....	Car. C. R. R.....	175
Back Creek.....	N. Carolina R. R.....	504
Baker's Knob.....	U. S. C. & G. S.....	1,812
Bald Mountain.....	Guyot.....	5,550
Baldwin Depot.....	Car. C. R. R.....	106
Balsam Cone.....	Guyot.....	6,671
Bear Wallow Mountain.....	U. S. C. & G. S.....	4,245
Belton.....	A. & F. B. V. R. R.....	876
Benn.....	U. S. C. & G. S.....	2,903
Big Craggy Mountain.....	Guyot.....	6,090
Do.....do.....	U. S. C. & G. S.....	6,068
Black Brother.....	Guyot.....	6,619
Black Rock.....	Guyot.....	5,815
Blackstock Knob.....	U. S. C. & G. S.....	6,378
Do.....do.....	Guyot.....	6,380
Bladenborough.....	Car. C. R. R.....	110
Bowlen's Pyramid.....	Guyot.....	6,348
Bristol.....	A. M. & O. R. R.....	1,089
Browns.....	R. & G. R. R.....	355
Brown's Summit.....	P. A. L. R. R.....	803
Brother Plott.....	Guyot.....	6,246
Brown Marsh Depot.....	Car. C. R. R.....	100
Buckley, Mount.....	Guyot.....	6,599
Bull's Head.....	Guyot.....	5,935
Cameron.....	R. & A. A. L. R. R.....	309
Cape Hatteras, Signal Station.....	U. S. Signal Office.....	8
Cape Lookout, Signal Station.....	U. S. Signal Office.....	15
Carleton Knob.....	U. S. C. & G. S.....	2,284
Caroline City.....	A. & N. C. R. R.....	10
Cary.....	R. & A. A. L. R. R.....	501
Catawba.....	W. N. C. R. R.....	1,294
Cat-tail Peak.....	Guyot.....	6,611
Cedar Fork.....	N. Carolina R. R.....	418
Charlotte.....	Charlotte, C. & A. R. R.....	747
Do.....do.....	Car. C. R. R.....	725
Do.. Signal Station.....	U. S. Signal Office.....	838
Chimney Peak.....	Guyot.....	6,234
Chimney Top Mountain.....	U. S. C. & G. S.....	4,573
Chowder.....	U. S. C. & G. S.....	1,606
Clayton.....	N. Carolina R. R.....	347
Clingman's Mountain.....	Guyot.....	6,707
Cold Mountain.....	U. S. C. & G. S.....	4,627
Do.....do.....	Guyot.....	6,063
Cold Spring Mountain.....	Guyot.....	5,915
Conelly's Gap.....	W. N. C. R. R.....	1,269
Coxcomb.....	Guyot.....	5,426
Craggy Pinnacle.....	Guyot.....	5,945
Dallas.....	C. & L. N. G. R. R.....	944
Deer Mountain.....	Guyot.....	6,233
Dover Swamp.....	A. & N. C. R. R.....	66
Durham.....	N. Carolina R. R.....	400
Easley.....	A. & F. B. V. R. R.....	1,043
East Drowning Creek Mountain.....	U. S. C. & G. S.....	2,126
Fodderstack or Terrapin Mountain.....	U. S. C. & G. S.....	4,510

Station.	Authority.	Elevation.
		<i>Feet.</i>
Fort Macon, Signal Station.....	U. S. Signal Office.....	11
Franklinton.....	R. & G. R. R.....	417
Friendship.....	N. W. N. C. R. R.....	892
Garibaldi.....	A. & R. A. L. R. R.....	712
Gaston.....	R. & G. R. R.....	152
Gastonia.....	A. & R. A. L. R. R.....	832
Gibbs, Mount.....	Guyot.....	6,501
Goldsboro.....	N. Carolina R. R.....	102
Graham.....	N. Carolina R. R.....	677
Grandfather.....	Guyot.....	5,897
Graybeard.....	Guyot.....	5,448
Great Hogback.....	U. S. C. & G. S.....	4,780
Do.....	Guyot.....	4,792
Greensboro.....	R. & D. R. R.....	831
Do.....	N. Carolina R. R.....	430
Hairy Bear.....	Guyot.....	6,681
Hallback.....	Guyot.....	6,403
Hall's Store.....	W. N. C. R. R.....	1,154
Hamlet.....	R. & A. R. R.....	331
Hardy, Mount.....	U. S. C. & G. S.....	6,102
Hatteras, Signal Station.....	U. S. Signal Office.....	20
Haw River.....	N. Carolina R. R.....	523
Henderson.....	R. & G. R. R.....	505
Hibriten, Mount.....	U. S. C. & G. S.....	2,265
Hickory.....	C. & L. N. G. R. R.....	1,222
High Pinnacle.....	Guyot.....	5,030
High Point.....	N. Carolina R. R.....	943
High Shoals Station.....	Car. C. R. R.....	1,001
Hillsborough.....	N. Carolina R. R.....	539
Hoffman.....	R. & A. R. R.....	335
Huckleberry Knob.....	Guyot.....	5,482
Hudsonville.....	C. & L. N. G. R. R.....	1,321
Jamestown.....	N. Carolina R. R.....	821
Junaleska, Mount.....	Guyot.....	6,223
Kermisville.....	N. W. N. C. R. R.....	1,016
Keyser.....	R. & A. R. R.....	286
King.....	U. S. C. & G. S.....	1,692
King's Mountain.....	A. & R. A. L. R. R.....	952
Kinston.....	A. & N. C. R. R.....	45
Kittrell.....	R. & G. R. R.....	417
Kittyhawk, Signal Station.....	U. S. Signal Office.....	22
Knights.....	N. W. N. C. R. R.....	942
Laurel Ridge.....	Car. C. R. R.....	245
Laurinburg.....	Car. C. R. R.....	230
Lenoir.....	C. & L. N. G. R. R.....	1,186
Lexington.....	N. Carolina R. R.....	776
Lickstone Mountain.....	Guyot.....	5,707
Lincolnton C. H.....	U. S. C. & G. S.....	944
Lincolnton.....	Car. C. R. R.....	866
Little Bald Mountain.....	U. S. C. & G. S.....	5,217
Little Pisgah.....	U. S. C. & G. S.....	4,437
Little River.....	N. Carolina R. R.....	86
Littleton.....	R. & G. R. R.....	380
Lone Balsam.....	Guyot.....	5,898
Long Ridge.....	U. S. C. & G. S.....	1,194
Lovelady.....	C. & L. N. G. R. R.....	1,259
Lumberton C. H.....	Car. C. R. R.....	135
McLaurins.....	Car. C. R. R.....	238
Macon.....	R. & G. R. R.....	376
Manly.....	R. & A. R. R.....	450
Marion.....	W. N. C. R. R.....	1,425
Marville.....	Car. C. R. R.....	65
Marshall.....	W. N. C. R. R.....	1,647
Mebanks.....	N. Carolina R. R.....	687

Station.	Authority.	Elevation.
		<i>Feet.</i>
Merry Oaks	R. & A. R. R.	245
Middleburgh	R. & G. R. R.	461
Midway	R. & G. R. R.	200
Mill Brook	R. & G. R. R.	304
Mitchell, Mount	Guyot	6,582
Mitchell's High Peak	U. S. C. & G. S.	6,688
Moncure	R. & A. R. R.	145
Monroe	Car. C. R. R.	586
Morganton	W. N. C. R. R.	1,140
Moore	U. S. C. & G. S.	579
Morrisville	N. Carolina R. R.	308
Moss Neck Station	Car. C. R. R.	159
Negro Mountain	U. S. C. & G. S.	4,597
Neuse	R. & G. R. R.	270
Neuse River	N. Carolina R. R.	112
Newbern Depot	A. & N. C. R. R.	12
New Hill	R. & A. R. R.	332
Newton	C. & L. N. G. R. R.	1,070
North Buffalo	N. Carolina R. R.	686
Old Bald Mountain	Guyot	5,786
Old Field Mountain	Guyot	5,100
Osgood	R. & A. R. R.	246
Panther Knob	Guyot	5,359
Pelham	P. A. L. R. R.	742
Perry Knob	Guyot	5,026
Pickens C. H.	A. & F. B. V. R. R.	1,093
Pickens Nose	U. S. C. & G. S.	4,910
Pilot Mountain	U. S. C. & G. S.	2,413
Pineville	Charlotte C. & A. R. R.	575
Pinnacle Mountain	U. S. C. & G. S.	3,832
Pisgah, Mount	U. S. C. & G. S.	5,713
Do	Guyot	5,757
Poore's Knob	U. S. C. & G. S.	2,680
Potatoe Top	Guyot	6,393
Princeton	N. Carolina R. R.	160
Raleigh	R. & A. R. R.	316
Do .....	.....	303
Red Banks	Car. C. R. R.	176
Reedy Patch Gap	Car. C. R. R.	2,242
Reidsville	P. A. L. R. R.	831
Rich Fork	N. Carolina R. R.	649
Richland Balsam Mountain	U. S. C. & G. S.	6,370
Do	Guyot	6,425
Ridgeway	R. & G. R. R.	415
Roan Mountain	Guyot	6,306
Rockingham Depot	Car. C. R. R.	210
Rockingham C. H. ....	.....	274
Rockstand Knob	Guyot	6,002
Rocky Face	Guyot	6,031
Rocky Knobs, S. peak	Guyot	5,306
Rocky Trail Peak	Guyot	6,488
Rosindale	Car. C. R. R.	127
Ruffin	P. A. L. R. R.	710
Saddleback Mountain	U. S. C. & G. S.	4,563
Salem Depot	N. W. N. C. R. R.	884
Salisbury	N. Carolina R. R.	760
Sanford	R. & A. R. R.	320
Shelby C. H.	Car. C. R. R.	875
Shoe Heel	Car. C. R. R.	194
Silver Creek Knob	U. S. C. & G. S.	2,849
Smithville, Signal Station	U. S. Signal Office	34
South Buffalo	N. Carolina R. R.	796
Spruce Ridge Top	Guyot	6,076
Standing Indian	U. S. C. & G. S.	5,435

Station.	Authority.	Elevation.
		<i>Feet.</i>
Standing Indian.....	Guyot.....	5,840
Statesville.....	W. N. C. R. R.....	175
Still House Gap.....	W. N. C. R. R.....	1,315
Sugar Loaf Mountain.....	U. S. C. & G. S.....	3,978
Tyron Mountain.....	U. S. C. & G. S.....	3,249
Do..... Northeast summit.....	U. S. C. & G. S.....	3,000
Wake.....	R. & G. R. R.....	384
Warm Springs.....	W. N. C. R. R.....	1,325
Warrenton.....	R. & G. R. R.....	451
Weldon.....	R. & G. R. R.....	72
Western Bald Mountain.....	Guyot.....	5,092
Whitehearts.....	N. W. N. C. R. R.....	976
White Rock Ridge.....	Guyot.....	5,598
White Side Mountain.....	U. S. C. & G. S.....	4,931
Williamston.....	A. & F. B. V. R. R.....	873
Wilmington Depot.....	Car. C. R. R.....	10
Do..... N. W. Station.....		50
Do..... Signal Station.....	U. S. Signal Office.....	52
Yeates' Knob.....	Guyot.....	5,975
Yellow Mountain.....	Guyot.....	5,198
Youngville.....	R. & G. R. R.....	449

OHIO.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Adams Mill, Lock 27	O. & E. Canal.....	745
Do..... Lock 28	O. & E. Canal.....	735
Do..... Lock 29	O. & E. Canal.....	725
Adams Mills.....	P., C. & St. L. R. R.	731
Air-Line Junction	L. S. & M. S. R. R.	607
Akron	N. Y., Pa. & O. R. R.	1,230
Aldine	C. N. R. R.	946
Alexanderville	C., C., C. & I. R. R.	725
Alliance.....	P., Ft. W. & C. R. R.	1,093
Alton	P., C. & St. L. R. R.	928
Amanda.....	C. & Z. R. R.	946
Amblers.....	B. & S. W. R. R.	670
Amelia	Cin. & P. R. R.	886
Amherst	L. S. & M. S. R. R.	695
Anderson	M. & C. R. R.	708
Andover	L. S. & M. S. R. R.	1,096
Do.. Geodetic Station.....	U. S. Lake Survey.....	1,191
Ansonia	C., C., C. & I. R. R.	1,006
Antwerp	T., W. & W. R. R.	729
Arcadia.....	L. E. & L. R. R.	806
Arcanum.....	I. B. & W. R. R.	1,054
Archbald	L. S. & M. S. R. R.	730
Armstrong's Mills	B. & S. W. R. R.	794
Ashland	N. Y., Pa. & O. R. R.	1,079
Ashley	C., C., C. & I. R. R.	985
Ashtabula	Ash. & P. R. R.	688
Ashtabula.....	L. S. & M. S. R. R.	648
Ashville.....	Scioto V. R. R.	716
Athens.....	M. & C. R. R.	654
Do.. B. M. on top of pier of bridge over M. & C.. R. R. and Hockhocking River	U. S. C. & G. S.	687
Attica	B. & P. C. R. R.	964
Aurora.....	A. & G. W. R. R.	1,104
Austinburgh	Ash. & P. R. R.	815
Austintown	N. Y., Pa. & O. R. R.	1,012
Avoca.....	C. N. R. R.	669
Baconsburg	A. & G. W. R. R.	999
Bairdstown	B., P. & C. R. R.	747
Ballow.....	C. N. R. R.	848
Bangs.....	C., Mt. V. & Del. R. R.	1,102
Barr's Mills	C., T. V. & W. R. R.	965
Barton	C., T. V. & W. R. R.	796
Bascom	B., P. & C. R. R.	783
Batavia Junction.....	P. C. & St. L. R. R.	491
Bayard	Cin. & P. R. R.	1,076
Bay Bridge	L., S. & M. S. R. R.	584
Beallsville	B. & S. W. R. R.	1,270
Beaver Dam.....	L., E. & L. R. R.	863
Beavers.....	P., C. & St. L. R. R.	808
Bedford	Cin. & P. R. R.	941
Belden	C., T., V. & W. R. R.	860
Belfast.....	C., C., C. & I. R. R.	941
Bellaire.....	Cin. & P. R. R.	655
Bellefontaine.....	C., C., C. & I. R. R.	1,216
Bellevue	L. S. & M. S. R. R.	755
Belkpre, wing-wall of 2d pier west end B. & O. R. R. bridge over Ohio River	U. S. C. & G. S.	622

Station.	Authority.	Elevation.
		<i>Feet.</i>
elpre, Hotel	M. & C. R. R.	630
erea	L. S. & M. S. R. R.	787
essemmer	C. & H. V. R. R.	681
ethel	B. & S. W. R. R.	1,255
ig Poland	M. & C. R. R.	753
ig Run	Scioto V. R. R.	555
ig Sand Furnace	M. & C. R. R.	712
lack Creek	C., Mt. V. & Del. R. R.	868
lack River	C., T. V. & W. R. R.	611
lancheater	M. & C. R. R.	977
loomdale	B. & P. C. R. R.	756
loomfield	Ash. & P. R. R.	905
lue Ash	C. N. R. R.	859
lufton	L. E. & L. R. R.	834
olivar (lock)	O. & E. Canal	907
oston	V. R. R.	668
otzums	V. R. R.	750
owlersville	N. Y., Pa. & O. R. R.	966
raceville	N. Y., Pa. & O. R. R.	907
rachmans	Cin. & P. R. R.	713
ranch Hill	P., C. & St. L. R. R.	590
Bremen	C. & M. V. R. R.	831
Bremen Summit (lock)	Miami Canal	960
Bricksville	V. R. R.	635
ridgeport	Cin. & P. R. R.	659
rier Hill	A. & P. R. R.	852
rinley's	P. C. & St. L. R. R.	1,124
Bristolville	A. & P. R. R.	927
Broadway	N. Y., Pa. & O. R. R.	1,032
Brookville	P. C. & St. L. R. R.	1,033
Brownhelm	L. S. & M. S. R. R.	640
Brown's	Cin. & P. R. R.	683
Do	P. C. & St. L. R. R.	1,060
Do	I. B. & W. R. R.	855
Bruce	C., T. Va. & W. R. R.	989
Bruss	I. B. & W. R. R.	1,092
Bryan	L. S. & M. S. R. R.	765
Buchtel	C. & H. V. R. R.	687
Buckskin	M. & C. R. R.	920
Bucyrus	P., Ft. W. & C. R. R.	930
Burbank	N. Y., Pa. & O. R. R.	958
Burghill	A. & G. W. R. R.	1,044
Butler	C., T. V. & W. R. R.	889
Cadiz Junction	P. C. & St. L. R. R.	1,091
Caldwell	M. & P. R. R.	736
Do	S. V. R. R.	811
Do	B. & S. W. R. R.	845
Caledonia	C., C., C. & I. R. R.	996
California	C. & P. R. R.	540
Camden, Geodetic Station	U. S. Lake Survey	891
Camp Dennison	P. C. & St. L. R. R.	570
Canal Dover	Cin. & P. R. R.	884
Canal Fulton	C., T. V. & W. R. R.	947
Canfield	N. Y., Pa. & O. R. R.	1,160
Canton	V. R. R.	1,031
Captina (mouth of Rocky Fork)	B. & S. W. R. R.	778
Carbon Hill	C. & H. V. R. R.	696
Cardington	C., C., C. & I. R. R.	1,011
Carey	S. D. & C. R. R.	818
Carlisle	C. H. & D. R. R.	696
Carroll	C. & H. V. R. R.	835
Carthage	C., C., C. & I. R. R.	551
atawba	C., C., C. & I. R. R.	1,065
cell	T. W. & W. R. R.	723

Station.	Authority.	Elevation.
		<i>Feet.</i>
Cedar Narrows	M. & P. R. R.	638
Cedar Point	Cin. & P. R. R.	726
Cedarville	P. C. & St. L. R. R.	1,035
Centreburch (cross O. C. R. R.)	C., Mt. V. & Del. R. R.	1,209
Centreton	B. & O. R. R.	873
Centreville	Cin. & P. R. R.	870
Ceylon	L. S. & M. S. R. R.	609
Champion	Ash. & P. R. R.	932
Cherry Grove	Cin. & P. R. R.	847
Chester, Geodetic Station	U. S. Lake Survey	1,292
Chester Park	C., C. & I. R. R.	508
Chicago Junction	B. P. & C. R. R.	901
Chillicothe	D. & S. E. R. R.	638
Do.... Pedestal, lamp-post, north side of steps, front of court-house.	U. S. C. & G. S.	638
Chippewa	C. T. V. & W. R. R.	1,056
Church Hill	N. Y., Pa. & O. R. R.	1,017
Cincinnati, Old depot	C. I., St. L. & C. R. R.	501
Do.... Plum street depot .....	.....	496
Do.... Depot	C. S. R. R.	503
Do.... Depot	O. & M. R. R.	494
Do.... Depot	C. N. E. R.	545
Do.... Depot	C. C. C. & I. R. R.	500
Do.... Depot	C. H. & D. R. R.	509
Do.... B. M. on west abutment M. & C. R. R. bridge over Mill Cr.	U. S. C. & G. S.	496
Do.... B. M. on front water-table of court-house	U. S. C. & G. S.	547
Do.... H. W. in Ohio River, 1858 .....	.....	484
Do.... H. W. in Ohio River, 1847	M. & C. R. R.	511
Do.... H. W. in Ohio River, 1832	M. & C. R. R.	511
Do.... Signal Station	U. S. Signal Office	620
Do.... Upper level of canal	Miami Canal	596
Do.... L. W., Ohio River (city base) ..	M. & C. R. R.	440
Circleville	C. & M. V. R. R.	720
Do.... Main street crossing	S. V. E. R.	682
Do.... C. & M. V. R. R. ....	.....	690
Claridon, Geodetic Station	U. S. Lake Survey	1,366
Clarkeville	C. & Z. R. R.	833
Clarke	I., B. & W. R. R.	1,080
Claysville	P. C. & St. L. R. R.	756
Cleveland	A. & G. W. R. R.	598
Do.... Union Depot	Cin. & P. R. R.	583
Do.... Machine shop	Cin. & P. R. R.	629
Do.... Euclid avenue	Cin. & P. R. R.	668
Do.... Newburgh	Cin. & P. R. R.	797
Do.... Signal Station	U. S. Signal Office	690
Do.... Lock 44, surface of water	O. & E. Canal	586
Cleves	C., I., St. L. & C. R. R.	497
Clinton	C., Mt. V. & Del. R. R.	959
Clough Pike	C. & P. R. R.	890
Clyde	L. S. & M. S. R. R.	691
Coburg	B. P. & C. R. R.	787
College Corner	C., H. & D. R.	990
Collins	L. S. & M. S. R. R.	879
Columbia	C., C. C. & I. R. R.	802
Do....	Cin. & P. R. R.	503
Columbiana	P., Ft. W. & C. R. R.	1,113
Columbus, Union Depot	C. & H. V. R. R.	748
Do.... Signal Station	U. S. Signal Office	806
Columbus Grove	C., H. & D. R. R.	758
Condit	C., Mt. V. & Del. R. R.	1,066
Conesville	P., C. & St. L. R. R.	724
Conneaut	L. S. & M. S. R. R. ....	.....

Station.	Authority.	Elevation.
		<i>Feet.</i>
Coolville.....	M. & C. R. R.....	630
Corwin.....	P., C. & St. L. R. R.....	729
Coshocton.....	P., C. & St. L. R. R.....	771
Coulton.....	D. & S. E. R. R.....	718
Coverts Mill.....	Ash. & P. R. R.....	790
Crab Apple.....	B. & S. W. R. R.....	962
Crestline.....	C., C., C. & I. R. R.....	1,155
Do.....	P., Ft. W. & C. R. R.....	1,162
Cutler.....	M. & C. R. R.....	777
Cuyahoga Falls.....	C., Mt. V. & Del. R. R.....	1,011
Danbury, Geodetic Station.....	U. S. Lake Survey.....	594
Danville.....	C., Mt. V. & Del. R. R.....	968
Davises.....	S. V. R. R.....	567
Dawn.....	C., C., C. & I. R. R.....	1,018
Dayton, Union depot.....	C., H. & D. R. R.....	743
Do.. Third street.....	C., H. & D. R. R.....	756
Do.. C., C., C. & I. R. R. crossing.....	N. Y., Pa. & O. R. R.....	752
Do.. D. & M. R. R. crossing.....	Miami Canal.....	739
Deerfield.....	C. & Z. R. R.....	650
Defiance.....		712
Do.....	W., St. L. & P. R. R.....	697
Do.. (lock).....	O. & E. Canal.....	670
Do.. (lock).....	O. & E. Canal.....	678
Do.. low water of Maumee.....	W. & E. Canal.....	667
Do.. Maumee River.....	T., W. & W. R. R.....	648
De Graff.....	C., C., C. & I. R. R.....	969
Delaware.....	C., C., C. & I. R. R.....	903
Delhi.....	C., L., St. L. & C. R. R.....	502
Delphos (surface of Miami Canal).....	P., Ft. W. & C. R. R.....	781
Do.. (lock).....	Miami Canal.....	784
Delta.....	L., S. & M. S. R. R.....	819
Do.....	P., C. & St. L. R. R.....	504
Dennison.....	N. Y., Pa. & O. R. R.....	1,308
Do.....	P., C. & St. L. R. R.....	855
Deshler.....	B., P. & C. R. R.....	721
Do.....	C., H. & D. R. R.....	594
Dexter City.....	M. & P. R. R.....	690
Dodson's.....	P., C. & St. L. R. R.....	1,051
Dorset.....	L. S. & M. S. R. R.....	1,018
Do.....	L. S. & M. S. R. R.....	988
Double Roscoe.....	O. & E. Canal.....	755
Doughtews.....	A. & G. W. R. R.....	973
Dover.....	C., C., C. & I. R. R.....	971
Do.. (lock).....	O. & E. Canal.....	879
Dresden.....	P., C. & St. L. R. R.....	735
Dresden Junction (at connection with P., C. & St. L. R. R.).....	C. & M. V. R. R.....	768
Dudley.....	M. & P. R. R.....	709
Duvall's.....	Scioto V. R. R.....	714
Eagleville.....	A. & P. R. R.....	792
Earlville.....	C. & P. R. R.....	1,091
East Akron.....	V. R. R.....	967
East Liverpool.....	C. & P. R. R.....	603
Easton.....	C., T. V. & W. R. R.....	961
East Orwell.....	Ash. & P. R. R.....	937
East Rochester.....	Cin. & P. R. R.....	1,089
Eden.....	C., C., C. & I. R. R.....	975
Edgerton.....	L. S. & M. S. R. R.....	830
Edinburgh.....	Ash. & P. R. R.....	780
Edison.....	C., T. V. & W. R. R.....	689
Edwards.....	C. & H. V. R. R.....	756
Eldorado.....	P. C. & St. L. R. R.....	1,178
Elliottsville.....	Cin. & P. R. R.....	638
Ellis.....	C. & M. V. R. R.....	779

Station.	Authority.	Elevation.
		<i>Feet.</i>
Elmore	L. S. & M. S. R. R.	658
Elmwood	Scioto V. R. R.	741
Elyria	L. S. & M. S. R. R.	713
Do.. Geodetic Station.....	U. S. Lake Survey	765
Elyria Junction.....	L. S. & M. S. R. R.	729
Enon	N. Y., Pa. & O. R. R.	875
Enon Crossing	P. C. & St. L. R. R.	1,024
Enterprise	C. & H. V. R. R.	747
Erie, Lake	U. S. Lake Survey	573
Euclid	L. S. & M. S. R. R.	627
Everett	V. R. R.	728
Fair Grounds.....	Scioto V. R. R.	769
Fairpoint	C. T. V. & W. R. R.	913
Fairview	P. C. & St. L. R. R.	1,009
Findlay	L. E. & L. R. R.	782
Floodwood	C. & H. V. R. R.	689
Florence	P. C. & St. L. R. R.	1,140
Flushing	C. T. V. & W. R. R.	1,118
Forestville.....	Cin. & P. R. R.	834
Forrest (crossing C. S. & C. R. R.)	P. Ft. W. & C. R. R.	940
Fort Ancient	P. C. & St. L. R. R.	669
Foster's	P. C. & St. L. R. R.	600
Fostoria	L. E. & L. R. R.	782
Frankfort	D. & S. E. R. R.	750
Franklin	C. C. C. & I. R. R.	693
Franklin Furnace	O. E. R. R.	549
Franklin Platform	N. Y., Pa. & O. R. R.	1,051
Frazysburgh	P. C. & St. L. R. R.	751
Fredericksburgh	C. Mt. V. & Del. R. R.	968
Freedom	N. Y., Pa. & O. R. R.	1,150
Freeport	P. C. & St. L. R. R.	688
Do	C. T. V. & W. R. R.	882
Freemont	L. S. & M. S. R. R.	632
Fruit Hill	Cin. & P. R. R.	819
Galena	C. Mt. V. & Del. R. R.	923
Galion	C. C. C. & I. R. R.	1,168
Do.. C. C. C. & I. R. R. crossing	N. Y., Pa. & O. R. R.	1,171
Do.. C. C. C. & I. R. R., Ind'polis Div.	N. Y., Pa. & O. R. R.	1,166
Gambier	C. Mt. V. & Del. R. R.	965
Gann	C. Mt. V. & Del. R. R.	874
Gano	C. C. C. & I. R. R.	661
Garrettsville	A. & G. W. R. R.	1,019
Geneva	L. S. & M. S. R. R.	668
Genntown	C. N. R. R.	885
Genoa	L. S. & M. S. R. R.	629
Girard	A. & G. W. R. R.	865
Glade Run	P. C. & St. L. R. R.	977
Glendale	C. H. & D. R. R.	640
Glen Este	Cin. & P. R. R.	876
Gnadenhutten.....	O. & E. Canal	830
Goes	P. C. & St. L. R. R.	863
Gore	C. & H. V. R. R.	763
Goshen	C. T. V. & W. R. R.	853
Gould's	P. C. & St. L. R. R.	679
Grafton	C. C. C. & I. R. R.	703
Do	C. T. V. & W. R. R.	801
Do.. Geodetic Station.....	U. S. Lake Survey	954
Graytown	L. S. & M. S. R. R.	601
Green	N. Y., Pa. & O. R. R.	1,129
Greencamp (tank).....	N. Y., Pa. & O. R. R.	920
Greendale	C. & H. V. R. R.	709
Greenfield (crossing of Paint Creek)	M. & C. R. R.	893
Greentown	V. R. R.	1,108
Greenwich	C. C. C. & I. R. R.	1,087

Station.	Authority.	Elevation.
		<i>Feet.</i>
Gretna	C., C., C. & I. R. R.	1,086
Groveport	C. & H. V. R. R.	739
Gumptions Branch	C. & Z. R. R.	898
Hageman	C. N. R. R.	686
Hamden	M. & C. R. R.	721
Hamilton	C. H. & D. R. R.	597
Do (basin)	Miami Canal	610
Hamler	B. P. & C. R. R.	723
Hammondsville	Cin. & P. R. R.	688
Hanging Rock	Scioto V. R. R.	557
Do (railroad crossing)	Scioto V. R. R.	551
Hanover	P. C. & St. L. R. R.	830
Harbines	P. C. & St. L. R. R.	806
Harbor	Ash. & P. R. R.	580
Harmar	M. & C. R. R.	623
Harper	C., C., C. & I. R. R.	1,299
Harshmans	C., C., C. & I. R. R.	783
Harts	C. T. V. & W. R. R.	693
Haselton	Ash. & P. R. R.	831
Havana	B. & O. R. R.	813
Haverhill	S. V. R. R.	553
Hawkers	P. C. & St. L. R. R.	915
Haydenville	C. & H. V. R. R.	704
Hayesville	Scioto V. R. R.	716
Hazewood	C. N. R. R.	842
Henderson	C., C. C. & I. R. R.	656
Henderson	C., T. V. & W. R. R.	851
Hennesseys	P. C. & St. L. R. R.	1,031
Hicksville	B., P. & C. R. R.	762
Higby	Scioto V. R. R.	594
Hillsborough, at eastern terminus of Hills- borough Branch	M. & C. R. R.	1,075
Holgate	B., P. & C. R. R.	722
Holland	L., S. & M. S. R. R.	641
Hollandsburgh	L., B. & W. R. R.	1,150
Holloway	C., T. V. & W. R. R.	911
Homeworth	C. & P. R. R.	1,150
Hookers	C. & H. V. R. R.	83'
Hopetown	Scioto V. R. R.	675
Houston	C., C. C. & I. R. R.	959
Howard	C., Mt. V. & Del. R. R.	900
Hoyt's Corners	B., P. & C. R. R.	721
Hubbard	A. & G. W. R. R.	937
Hudson	Cin. & P. R. R.	1,053
Huron	L. S. & M. S. R. R.	598
Iberia	C., C. C. & I. R. R.	1,156
Idlewild	C. N. R. R.	700
Independence	V. R. R.	606
Do (Lock)	O. & E. Canal	662
Ironton (Ironton R. R., last crossing)	Scioto V. R. R.	550
Irwin	C., C. C. & I. R. R.	1,012
Do	B. & S. W. R. R.	932
Ivanhoe	C. N. R. R.	664
Jackson	L. E. & L. R. R.	761
Jacobsburgh	B. & S. W. R. R.	1,330
Jamestown	D. & S. E. R. R.	1,071
Jefferson	L. S. & M. S. R. R.	941
Jerusalem	B. & S. W. R. R.	1,300
Johnson's	Scioto V. R. R.	554
Jones' Station	C., H. & D. R. R.	672
Judds	Cin. & P. R. R.	884
Justus	C., T. V. & W. R. R.	994
Kansas	L. E. & L. R. R.	731
Kelly's Island, Geodetic Station	U. S. Lake Survey	614

Station.	Authority.	Elevation.
		<i>Feet.</i>
Kennard	N. Y., Pa. & O. R. R.	1,174
Kennedy	C. N. R. R.	743
Kensington	Cin. & P. R. R.	1,130
Kent	N. Y., Pa. & Ohio R. R.	{ 1,050 1,273
Kenton	S. D. & C. R. R.	1,015
Kessler	I., B. & W. R. R.	925
Kings	P., C. & St. L. R. R.	612
Kingston	N. Y., Pa. & O. R. R.	1,097
Do	Scioto V. R. R.	770
Kingsville	L. S. & M. S. R. R.	672
Kinnikinnick	Scioto Valley R. R.	672
Kipton	L. S. & M. S. R. R.	853
Kneisley's	C., C. C. & I. R. R.	802
Krumwoy	V. R. R.	1,051
Kyles	C., C. C. & I. R. R.	718
Do	Cin. & P. R. R.	859
Kafferty	C., T. V. & W. R. R.	1,027
La Grange	Cin. & P. R. R.	679
Do	C., C. C. & I. R. R.	828
Lancaster	C. & M. V. R. R.	854
La Rue	C., C. C. & I. R. R.	926
Laughlins	Cin. & P. R. R.	949
Laura	I., B. & W. R. R.	970
Lawrence Junction	Ash. & P. R. R.	775
Leavittsburg	A. & G. W. R. R.	895
Do.....crossing of main line & Mah. Div	A. & G. W. R. R.	907
Lebanon	C. N. R. R.	709
Leesburg	M. & C. R. R.	1,030
Leetonia	P., Ft. W. & C. R. R.	1,016
Do..P., F. W. & C. crossing	N. Y., Pa. & O. R. R.	1,018
Leipsic	C., H. & D. R. R.	746
Leon	L. S. & M. S. R. R.	1,114
Leveing	C., C. C. & I. R. R.	1,056
Lexington	C. & Z. R. R.	896
Liberty	T., W. & W. R. R.	683
Do.(Tank)	N. Y., Pa. & O. R. R.	1,071
Lima	C. H. & D. R. R.	859
Do.crossing O. & M. & P. Ft. W. & C. R. R.	L. E. & L. R. R.	885
Do.crossing D. and M. Railroad	P., Ft. W. & C. R. R.	779
Lima ville	Cin. & P. R. R.	1,098
Lindsey	L. S. & M. S. R. R.	622
Linwood	P., C. & St. L. R. R.	503
Little Hocking	M. & C. R. R.	635
Little Mountain, Geodetic Station	U. S. Lake Survey	1,248
Lockbourne	Scioto V. R. R.	720
Locke	B. P. & C. R. R.	881
Lockport (Lock)	O. & E. Canal	867
Lockville	C. & H. V. R. R.	797
Locust Switch	N. Y., Pa. & O. R. R.	1,053
Lodi	S. D. & C. R. R.	855
Logan	C. & H. V. R. R.	729
London	P., C. & St. L. R. R.	1,049
Londonderry	M. & C. R. R.	625
Londonville	P., Ft. W. & C. R. R.	975
Long's Summit	N. Y., Pa. & O. R. R.	883
Loveland	C. & Z. R. R.	605
Do...B. M. on east abutment M. & C. R. R. bridge over Little Miami River	U. S. C. & G. S.	582
Do...B. M. on east abutment M. & C. R. R. bridge over Little Miami River	P. C. & St. L. R. R.	581

Station.	Authority.	Elevation.
		<i>Feet.</i>
Loveland crossing Little Miami River.....	M. & C. R. R.....	592
Do... crossing Little Miami Railroad..	M. & C. R. R.....	594
Lowell.....	N. C. & B. V. R. R.....	826
Lucas.....	P., Ft. W. & C. R. R.....	1,091
Lucasville.....	Scioto V. R. R.....	556
Ludlow Falls.....	I. B. & W. R. R.....	900
McCoys.....	Cin. & P. R. R.....	684
Macedonia.....	Cin. & P. R. R.....	993
McLuney.....	C. & Z. R. R.....	905
Madison.....	L. S. & M. S. R. R.....	715
Mahoning.....	A. & G. W. R. R.....	943
Do... summit.....	Cin. & P. R. R.....	1,200
Malvern.....	Cin. & P. R. R.....	998
Manchester.....	P., C. & St. L. R. R.....	1,094
Mansfield.....	B. & O. R. R.....	1,154
Do.....	P., Ft. W. & C. R. R.....	1,151
Do... B., Ft. W. & C. R. R. crossing.....	N. Y., Pa. & O. R. R.....	1,155
Do... B. & O. R. R. crossing.....	N. Y., Pa. & O. R. R.....	1,159
Mantua.....	A. & G. W. R. R.....	1,111
Marietta, crossing of Muskingum River.....	M. & C. R. R.....	640
Do... L. W. in Muskingum River.....	M. & C. R. R.....	582
Do... Wayne street depot.....	M. & P. R. R.....	611
Do... Fourth street depot.....	M. & P. R. R.....	616
Marion.....	C., C. C. & I. R. R.....	979
Do... C. C. & I. R. R. crossing.....	N. Y., Pa. & O. R. R.....	965
Mark Center.....	B., P. & C. R. R.....	731
Marksburgh.....	M. & P. R. R.....	680
Marshfield.....	M. & C. R. R.....	826
Martin.....	L. S. & M. S. R. R.....	606
Martin's Ferry.....	Cin. & P. R. R.....	659
Martinsville.....	M. & C. R. R.....	1,043
Do... B. M. on east abutment of M. & C. R. R. bridge.....	U. S. C. & G. S.....	1,057
Marysville.....	C., C. C. & I. R. R.....	999
Mason.....	C. N. R. R.....	827
Massillon.....	C., T. V. & W. R. R.....	944
Do.....	P., Ft. W. & C. R. R.....	954
Do.....	Wheeling & L. E. R. R.....	962
Do.....	C., T. V. & W. R. R.....	963
Do... (Lock 5).....	O. & E. Canal.....	940
Do... (Lock 5a).....	O. & E. Canal.....	934
Masterville.....	P., C. & St. L. R. R.....	936
Mauds.....	C., C. C. & I. R. R.....	759
Manmee.....	T. W. & W. R. R.....	637
Mechanicsburg.....	C., C. C. & I. R. R.....	1,058
Medina.....	C., T. V. & W. R. R.....	1,086
Melbern.....	L. S. & M. S. R. R.....	841
Mentor.....	L. S. & M. S. R. R.....	650
Mesopotamia, Geodetic Station.....	U. S. Lake Survey.....	1,172
Miami City.....	P., C. & St. L. R. R.....	744
Miamisburgh.....	C., C. C. & I. R. R.....	714
Do.....	C., H. & D. R. R.....	649
Miamiville.....	C. & Z. R. R.....	592
Do.....	P., C. & St. L. R. R.....	580
Middle Bass, Geodetic Station.....	U. S. Lake Survey.....	581
Middleton.....	C., C. C. & I. R. R.....	667
Do.....	C., H. & D. R. R.....	649
Milford.....	C. & Z. R. R.....	577
Milford.....	C. C. C. & I. R. R.....	996
Do.....	P., C. & St. L. R. R.....	552
Millbury Junction.....	L. S. & M. S. R. R.....	615
Miller's.....	P., C. & St. L. R. R.....	1,007
Millersburg.....	C., Mt. V. & Del. R. R.....	816
Millville.....	C. & H. V. R. R.....	752

Station.	Authority.	Elevation.
		<i>Feet.</i>
Milton	N. Y., Pa. & O. R. R.	1,193
Mineral City	M. & C. R. R.	726
Mineral Ridge	N. Y., Pa. & O. R. R.	970
Minerva	Cin. & P. R. R.	1,052
Mingo	Cin. & P. R. R.	687
Do	N. Y., Pa. & O. R. R.	1,206
Monday Creek Station	C. & H. V. R. R.	689
Monroe (summit)	D. & S. E. R. R.	1,063
Monroeville	L. S. & M. S. R. R.	725
Montgomery's	P., C. & St. L. R. R.	800
Moonville	M. C. & C. R. R.	723
Do . . . Bench-mark on east abutment of bridge over Kaccoon Creek, M. & C. R. R. .	U. S. C. & G. S.	713
Moorfield	C., C. C. & I. R. R.	1,021
Morrison	C. N. R. R.	882
Morrow	C. & M. V. R. R.	666
Moultrie	Cin. & P. R. R.	1,103
Mount Carmel	Cin. & P. R. R.	899
Mount Liberty	C., Mt. V. & Del. R. R.	1,215
Mount Summit	Cin. & P. R. R.	885
Mount Vernon	B. & O. R. R.	991
Mount Victory	C., C. C. & I. R. R.	1,036
Mount Washington	Cin. & P. R. R.	766
Munson Hill	Ash. & P. R. R.	866
Nankin	N. Y. Pa. & O. R. R.	1,123
Napoleon	T. W. & W. R. R.	680
Navarre	C., T. V. & W. R. R.	993
Do. (Lock)	O. & E. Canal.	924
Nebo	Ash. & P. R. R.	840
Nelsonville	C. & H. V. R. R.	682
Newark	P. C. & St. L. R. R.	819
Do. north end of city	B. & O. R. R.	791
New Baltimore	B. P. & C. R. R.	740
Newburgh	A. & G. W. R. R.	813
Do . . . grade crossing C. & P. R. R. .	A. & G. W. R. R.	748
New Carlisle	I. B. & W. R. R.	89
Newcastle (Lock)	O. & E. Canal.	859
Newcomerstown	P., C. & St. L. R. R.	796
Do . . . (Lock)	O. & E. Canal.	800
New England	M. & C. R. R.	808
New Haven	B. & O. R. R.	918
New Holland	C. & Z. R. R.	876
New Lexington	C. & M. V. R. R.	897
New Lisbon	N. Y., Pa. & O. R. R.	958
New London	C., C. C. & I. R. R.	980
New Lyme	Ash., P. R. R.	906
New Market	P., C. & St. L. R. R.	959
New Paris	P., C. & St. L. R. R.	1,020
New Philadelphia	C., T. V. & W. R. R.	874
Do	Cin. & P. R. R.	804
Newport	C., T. V. & W. R. R.	870
New Portage	N. Y., Pa. & O. R. R.	1,204
New Straitsville	C. & H. V. R. R.	790
Newtown	P., C. & St. L. R. R.	494
Niles	Ash. & P. R. R.	864
Do	N. Y., Pa. & O. R. R.	889
Niles Junction with N. & N. L. R. R. .	A. & G. W. R. R.	890
North Bend	C., I. St. L. & C. R. R.	497
North Eaton	C., C. C. & I. R. R.	811
Northfield Summit	Cin. & P. R. R.	1,043
North Lewisburgh	N. Y., Pa. & O. R. R.	1,082
Norwalk	L. S. & M. S. R. R.	719
Norwood	C. N. R. R.	628
Oakfield	Ash. & P. R. R.	912

Station.	Authority.	Elevation.
		<i>Feet.</i>
Oak Harbor	L. S. & M. S. R. R.	596
Oberlin	L. S. & M. S. R. R.	815
Odell, Lake	Toner	924
Oldtown	P., C. St. L. & P. R. R.	834
Old Portage	O. & E. Canal	766
Olive Branch	Cin. & P. R. R.	832
Olmstead Falls	L. S. & M. S. R. R.	770
Do	U. S. Lake Survey	794
Olmstead	C., C. C. & I. R. R.	782
Oneida	Cin. & P. R. R.	1,015
Ontario	N. Y., Pa. & O. R. R.	1,377
Orangeville	A. & G. W. R. R.	945
Orbiston	C. & H. V. R. R.	698
Oreville	C. & H. V. R. R.	730
Orrville	C., Mt. V. & Del. R. R.	1,056
Do	P., Ft. W. & C. R. R.	1,068
Orwell	N. C. & B. V. R. R.	936
Osborn	C., C. C. & I. R. R.	830
Osborne	N. Y., Pa. & O. R. R.	829
Ostrander	C., C. C. & I. R. R.	934
Ottawa	C., H. & D. R. R.	713
Oxford	C., H. & D. R. R.	918
Do	P., C. & St. L. R. R.	793
Ozark	B. & S. W. R. R.	1,265
Painesville	L. S. & M. S. R. R.	650
Palestine	P., Ft. W. & C. R. R.	1,014
Pasco	C., T. V. & W. R. R.	731
Patterson	C., T. V. & W. R. R.	771
Pauls	C., T. V. & W. R. R.	439
Pemberton	C., C. C. & I. R. R.	1,063
Pendleton	P. C. & St. L. R. R.	519
Peninsula	V. R. R.	699
Do	O. & E. Canal	703
Peoria	N. Y., Pa. & O. R. R.	1,044
Perry	L. S. & M. S. R. R.	707
Perrysburgh	C. H. & D. R. R.	622
Petersburgh Coal Grove P. O.	Scioto V. R. R.	558
Pettisville	L. S. & M. S. R. R.	753
Phalanx	A. & G. W. R. R.	918
Pierce's	P. C. & St. L. R. R.	1,029
Pike	N. Y., Pa. & O. R. R.	982
Piketon	Scioto V. R. R.	570
Pilcher	M. & C. R. R.	874
Piqua	C., H. & D. R. R.	918
Plainville	C. & Z. R. R.	519
Do	P. C. & St. L. R. R.	492
Pleasant Plains	M. & C. R. R.	902
Pleasant Ridge	C. N. R. R.	658
Plymouth	B. & O. R. R.	993
Do	L. S. & M. S. R. R.	854
Polk	N. Y., Pa. & O. R. R.	1,241
Pond	A. & G. W. R. R.	1,043
Pontiac	B. & O. R. R.	763
Port Clinton	L. S. & M. S. R. R.	581
Portland	Cin. & P. R. R.	679
Portsmouth (S. V. Depot)	Scioto V. R. R.	533
Do	Scioto V. R. R.	538
Do	Scioto V. R. R.	538
Port Washington	P. C. & St. L. R. R.	813
Do	O. & E. Canal	824
Pottersburgh	N. Y., Pa. & O. R. R.	1,093
Prouts	B. & O. R. R.	708
Providence (Lock)	O. & E. Canal	637
Quakertown	Ash. & P. R. R.	817

Station.	Authority.	Elevation.
		<i>Feet.</i>
Quincy.....	C., C. C. & I. R. R.....	1,050
Randall.....	A. & G. W. R. R.....	1,046
Ravenna.....	Cin. & P. R. R.....	1,103
Rawson.....	L. E. & L. R. R.....	821
Raysville.....	M. & C. R. R.....	636
Red Bank.....	P. C. & St. L. R. R.....	501
Reese's.....	Scioto V. R. R.....	735
Reeseville.....	C. & Z. R. R.....	1,086
Republic.....	B., P. & C. R. R.....	895
Richland.....	P., Ft. W. & C. R. R.....	1,201
Richmond.....	P. C. & St. L. R. R.....	968
Do.....	L. S. & M. S. R. R.....	1,114
Richwood.....	N. Y., Pa. & O. R. R.....	948
Ridgefield.....	B., P. & C. R. R.....	779
Ridgeway.....	C., C. C. & I. R. R.....	1,059
Rochester.....	C., C. C. & I. R. R.....	935
Rock Creek.....	Ash. & P. R. R.....	846
Rockport.....	L. S. & M. S. R. R.....	884
Do...Geodetic Station.....	U. S. Lake Survey.....	781
Rock Run.....	P., C. & St. L. R. R.....	758
Robbins.....	N. Y., Pa. & O. R. R.....	962
Rome.....	Ash. & P. R. R.....	884
Rootstown.....	Cin. & P. R. R.....	1,123
Roseville.....	C. & Z. R. R.....	783
Royalton, Geodetic Station.....	U. S. Lake Survey.....	1,272
Rush Run.....	Cin. & P. R. R.....	679
Rushsylvania.....	C., C. C. & I. R. R.....	1,236
Russell.....	C., T. V. & W. R. R.....	969
Do...(C. T. V. & W. R. R crossing).....	N. Y., Pa. & O. R. R.....	973
Russells.....	P., C. & St. L. R. R.....	501
Russia.....	C., C. C. & I. R. R.....	971
Sabina.....	C. & M. V. R. R.....	1,066
St. Marys.....	Miami Canal.....	864
Salem.....	M. & P. R. R.....	682
Do.....	P., Ft. W. & C. R. R.....	1,173
Salina.....	C. & H. V. R. R.....	659
Salineville.....	Cin. & P. R. R.....	879
Salt Creek.....	D. & S. E. R. R.....	588
Sandusky, City base.....	City Engineer.....	587
Do...depot.....	L. S. & M. S. R. R.....	593
Do...depot.....	S., D. & C. R. R.....	598
Do...depot.....	B. & O. R. R.....	609
Do...Geodetic Station.....	U. S. Lake Survey.....	632
Do...Signal Station.....	U. S. Signal Office.....	639
Sargents.....	Scioto V. R. R.....	577
Saville.....	C., T. V. & W. R. R.....	986
Saybrook.....	L. S. & M. S. R. R.....	651
Schooleys.....	M. & C. R. R.....	666
Sciotoville (junction with M. & C. R. R).....	Scioto V. R. R.....	546
Selma.....	P., C. & St. L. R. R.....	1,083
Seynours.....	Ash. & P. R. R.....	797
Shakerton.....	C. N. R. R.....	745
Sharon.....	C., C., C. & I. R. R.....	601
Sharonville.....	Scioto V. R. R.....	597
Shawville.....	L. S. & M. S. R. R.....	744
Shelby.....	B. & O. R. R.....	1,088
Do...Junction.....	B. & O. R. R.....	1,086
Shiloh.....	C., C., C. & I. R. R.....	1,080
Shoups.....	P., C. & St. L. R. R.....	831
Sidney.....	C., C., C. & I. R. R.....	969
Silver Creek.....	C., T. V. & W. R. R.....	948
Do.....	N. Y., Pa. & O. R. R.....	1,392
Do.....(summit).....	D. & S. E. R. R.....	1,118
Silverton.....	C. N. R. R.....	625

Station.	Authority.	Elevation.
		<i>Feet.</i>
Skelley's Station	P., C. & St. L. R.R.	841
Sligo	C. & Z. R. R.	901
Smithfield	P., C. & St. L. R.R.	773
Smithville	P., Ft. W. & C. R.R.	1,122
Snyder	N. Y., Pa. & O. R.R.	900
Solon	A. & G. W. R.R.	1,041
Sonora	P., C. & St. L. R.R.	1,039
South Charleston	P., C. & St. L. R.R.	1,126
South Lebanon	C. & Z. R.R.	652
Do	P., C. & St. L. R.R.	628
Spafford	C., C., C. & I. R.R.	1,033
Spencerville (Lock)	Miami Canal	847
Spences	M. & C. R.R.	827
Springfield, Union Depot	P., C. & St. L. R.R.	991
Spring Mill	B. & O. R.R.	1,176
Spring Valley	P., C. & St. L. R.R.	758
Stanley	B., P. & C. R.R.	731
Do	M. & P. R.R.	629
Standing Stone	B. & S. W. R.R.	904
Steubenville	Cin. & P. R.R.R.	679
Do	Washington Street	728
Stillwater	C., T. V. & W. R.R.	863
Do	Junction	791
Stiles	Cin. & P. R.R.	503
Stony Creek	Scioto V. R.R.	597
Stouts	C. & Z. R.R.	1,008
Strasburgh	P., Ft. W. & C. R.R.	1,187
Strasburgh	C., T. V. & W. R.R.	917
Struthers	Ash. & P. R.R.	836
Stryker	L. S. & M. S. R.R.	715
Styx River, surface water	N. Y., Pa. & O. R.R.	1,169
Sugar Grove	C. & H. V. R.R.	769
Sullivant's	P., C. & St. L. R.R.	834
Suman	B., P. & C. R.R.	747
Sunbury	C., Mt. V. & Del. R.R.	970
Swanton	L. S. & M. S. R.R.	684
Sylvania	L. S. & M. S. R.R.	652
Tallmadge	N. Y., Pa. & O. R.R.	1,333
Teegardin	N. Y., Pa. & O. R.R.	1,043
Terrace Park	P., C. & St. L. R.R.	555
Texas (Lock)	O. & E. Canal	662
Thompson, Geodetic Station	U. S. Lake Survey	1,307
Thorn Hill	A. & G. W. R.R.	869
Three Locks	Scioto V. R.R.	617
Tiffin	B., P. & C. R.R.	759
Tippecanoe	C., H. & D. R.R.	843
Toledo	O. Cent. R.R.	583
Do. Union depot	L. S. & M. S. R.R.	580
Do. Air Line Junction	L. S. & M. S. R.R.	611
Do. Lake Erie	W., St. L. & P. R.R.	573
Do. (Lock 1, surface of water)	O. & E. Canal	580
Do. (Lock 2)	O. & E. Canal	588
Do. (Lock 3)	O. & E. Canal	596
Do. (Lock 4)	O. & E. Canal	605
Do. (Lock 5)	O. & E. Canal	613
Do. low water of Maumee River	W. & E. Canal	573
Do. Signal Station	U. S. Signal Office	651
Tontogany	C., H. & D. R.R.	652
Torch	M. & C. R.R.	723
Toronto	Cin. & P. R.R.	698
Townsend, Geodetic Station	U. S. Lake Survey	923
Trenton	P., C. & St. L. R.R.	833
Do. (Lock 15)	O. & E. Canal	849
Do. (Lock 16)	O. & E. Canal	841

Station.	Authority.	Elevation.
		<i>Feet.</i>
Trotwood	P., C. & St. L. R. R.	844
Troy	C., H. & D. R. R.	850
Do. Canal	Miami Canal	830
Do. Crossing Dayton & Mich. R.R.	I., B. & W. R. R.	847
Tuscarawas	C., T. V. & W. R. R.	827
Uhrichsville	P., C. & St. L. R. R.	863
Undercliff	P., C. & St. L. R. R.	495
Union Mills Junction	B., P. & C. R. R.	759
Unionport	P., C. & St. L. R. R.	946
Uniontown	V. R. R.	1,073
Unionville	L. S. & M. S. R. R.	704
Urbana, C. S. & C. and P. C. O. & S. & L. R. R. crossing	N. Y., Pa. & O. R. R.	1,030
Utica	C. N. R. R.	974
Valley Junction	C., I., St. L. & C. R. R.	499
Van Wert	P., Ft. W. & C. R. R.	784
Venice	L. S. & M. S. R. R.	585
Vermillion	L. S. & M. S. R. R.	596
Vernon	C., C., C. & I. R. R.	1,127
Versailles	C., C., C. & I. R. R.	977
Vienna	M. & C. R. R.	1,130
Vienna Junction	N. Y., Pa. & O. R. R.	869
Vincent	M. & C. R. R.	774
Wade	Cin. & P. R. R.	495
Wadsworth	N. Y., Pa. & O. R. R.	1,349
Wakeman	L. S. & M. S. R. R.	862
Walkerton Junction	B., P. & C. R. R.	719
Wapakoneta	C. H. & D. R.	876
Warren	Ash. & P. R. R.	875
Do.	M. & C. R. R.	671
Warrensville, Geodetic Station	U. S. Lake Survey	1,214
Warwick	C., T. V. & W. R. R.	958
Washington C. H.	C. & Z. R. R.	983
Do.	T. W. & W. R. R.	660
Washingtonville	N. Y., Pa. & O. R. R.	1,059
Wauseon	L. S. & M. S. R. R.	768
Waverly Depot	Scioto V. R. R.	574
Wayne	C. & Z. R. R.	764
Waynesburgh	Cin. & P. R. R.	981
Weavers	P., C. & St. L. R. R.	977
Wegee	B. & S. W. R. R.	645
Wellston	D. & S. E. R. R.	738
Wellsville	Cin. & P. R. R.	688
Do.	Cin. & P. R. R.	845
West Chester	C., C., C. & I. R. R.	745
Westerville	C., Mt. V. & Del. R. R.	875
West Jefferson	P., C. & St. L. R. R.	908
West Lafayette	D., C. & St. L. R. R.	803
West Liberty	S. D. & C. R. R.	1,099
Weston	C., H. & D. R. R.	666
West Salem	N. Y., Pa. & O. R. R.	1,095
West Wheeling	C., T. V. & W. R. R.	648
Do. low water in Ohio River ..	C., T. V. & W. R. R.	618
Wetmore	Scioto V. R. R.	558
Wheeler	C. N. R. R.	875
Whealersburgh	Scioto V. R. R.	540
Whipple	M. P. R. R.	656
White House	T. W. & W. R. R.	653
Whites Mill	B., P. & C. R. R.	717
Wickliffe	L. S. & M. S. R. R.	657
Williamsport	C. & M. V. R. R.	783
Willington	C., C., C. & I. R. R.	855
Willoughby	L. S. & M. S. R. R.	635
Do. Geodetic Station	U. S. Lake Survey	613

Station.	Authority.	Elevation.
		<i>Fest.</i>
Wilmington	C. & M. V. R. R.	1,017
Winchester	C. & H. V. R. R.	771
Windham	N. Y., Pa. & O. R. R.	964
Windsor	N. Y., Pa. & O. R. R.	1,067
Winona	C. & H. V. R. R.	743
Woodburn	P. C. & St. L. R. R.	533
Woodland	N. Y., Pa. & O. R. R.	950
Do.	P., Ft. W. & C. R. R.	1,245
Woodsfield	B. & S. W. R. R.	1,173
Xenia	P., C. & St. L. R. R.	928
Yellow Creek	O. & E. Canal	758
Yellow Springs	P., C. & St. L. R. R.	978
York	C., T. V. & W. R. R.	
Youngstown	A. & G. W. R. R.	863
Zaleski	M. & Co. R. R.	721
Zanesville	C. & M. V. R. R.	743
Zoar	Cin. & P. R. R.	887
Zoar Mills (lock)	O. & E. Canal	893

OREGON.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Albany.....	Oregon & Cal. R. R.....	238
Albany Junction.....	A. & L. R. R.....	249
Albert Lake.....	Wheeler.....	4,209
Alkali.....	N. P. R. R.....	232
Amity.....	W. & O. & O. C. R. R.....	183
Antelope P. O.....	Wheeler.....	2,845
Astoria.....	Med. Dept. U. S. A.....	50
Auburn.....	Smithsonian Inst.....	3,300
Aurora.....	Oreg. & Cal. R. R.....	218
Baker City.....	Oreg. R. R. & Nav. Co.....	3,418
Barnum's Ranch.....	Wheeler.....	1,795
Beaverton.....	W. & O. & O. C. R. R.....	212
Big Meadows.....	Wheeler.....	4,124
Big Spring.....	Wheeler.....	4,553
Big Summit Prairie.....	Wheeler.....	5,124
Bonneville.....	N. P. R. R.....	60
Box Elder Mountain.....	Wheeler.....	9,541
Brattons Ranch.....	Wheeler.....	4,495
Bridal Veil.....	N. P. R. R.....	46
Burnt Ranch, John Day River.....	Wheeler.....	1,561
Button's Ranch.....	Wheeler.....	4,237
Camar.....	Powell.....	44
Cameron, Fort.....	Wheeler.....	6,057
Canby.....	Oreg. & Cal. R. R.....	175
Cañonville.....	Pacific R. R. Reports.....	516
Carlton.....	W. & O. & O. C. R. R.....	222
Carmical's Ranch.....	Wheeler.....	2,736
Cascade Range, Timber line on.....		7,000
Cedarville Pass.....	Wheeler.....	6,256
Cedarville Peak Valley.....	Wheeler.....	8,308
Cedarville, Surprise Valley.....	Wheeler.....	4,675
Celilo.....	Oreg. B. R. & Nav. Co.....	142
Do.....	N. P. R. R.....	160
Chewanacan Marsh.....	Wheeler.....	4,336
Clackamas.....	Oreg. & Cal. R. R.....	134
Clarno.....	N. P. R. R.....	214
Columbia City.....	N. P. R. R.....	90
Cornelius.....	W. & O. & O. C. R. R.....	200
Corral Springs.....	Wheeler.....	4,569
Corvallis.....	W. & O. & O. C. R. R.....	253
Cottage Springs.....	Wheeler.....	5,718
Coyote.....	Powell.....	257
Crater Lake.....	Wheeler.....	7,143
Creswell.....	Oreg. & Cal. R. R.....	565
Cross Hollows.....	Wheeler.....	3,197
Currant Creek, stage station.....	Wheeler.....	2,142
Curriu's Ranch.....		532
Curry Spring.....	Wheeler.....	4,273
Dallas.....	Wheeler.....	135
Dalles, The.....	N. P. R. R.....	106
Do.....	Oreg. R. R. & Nav. Co.....	77
Dayton Junction.....	Oreg. R. R. & Nav. Co.....	1,141
Derry.....	W. & O. & O. C. R. R.....	214
Deschutte's Bridge.....	Wheeler.....	166
Deschutte's River Bridge.....	Wheeler.....	2,553
Diamond Peak.....	Wheeler.....	8,807
Dillard & Renshaw's Ranch.....	Wheeler.....	4,657
Dilley.....	W. & O. & O. C. R. R.....	217

Station.	Authority.	Elevation.
		<i>Feet.</i>
Drains.....	Oreg. & Cal. R. R.....	318
Drew Valley Post-Office.....	Wheeler.....	4,953
Duke.....	U. S. C. & G. S.....	10
Durand's Ranch (Silver Lake).....	Wheeler.....	4,312
East Portland.....	Oreg. & Cal. R. R.....	52
Ebla.....	Toner.....	500
Empire.....	U. S. C. & G. S.....	49
Eugene.....	Oreg. & Cal. R. R.....	451
Finnegan's Ranch, Military Road.....	Wheeler.....	2,143
Fish Lake.....	Wheeler.....	3,155
Fletcher Ranch Valley.....	Wheeler.....	4,819
Forest Grove.....	W. & O. & O. C. R. R.....	193
Foster's Ranch, on Summer Lake.....	Wheeler.....	4,174
Froman.....	A. & L. R. R.....	263
Fry.....	A. & L. R. R.....	287
Gaston.....	W. & O. & O. C. R. R.....	206
Gervais.....	Oreg. & Cal. R. R.....	210
Goltra.....	A. & L. R. R.....	306
Granite Mountain.....	Wheeler.....	8,990
Grant's.....	Powell.....	180
Grant's Landing.....	Wheeler.....	336
Green's Ranch.....	Wheeler.....	4,470
Hald's Ranch.....	Wheeler.....	3,287
Halsey.....	Oreg. & Cal. R. R.....	307
Harney's Lake.....	Wallen.....	4,150
Harrisburg.....	Oreg. & Cal. R. R.....	332
Harris's Ranch.....	.....	1,187
Henderson.....	U. S. C. & G. S.....	39
Hillsborough.....	W. & O. & O. C. R. R.....	198
Hood River.....	Wheeler.....	260
Hoskin's Ranch, Silver Creek.....	Wheeler.....	4,139
Hubbard.....	Oreg. & Cal. R. R.....	206
Independence.....	W. & O. & O. C. R. R.....	195
Irvineville.....	A. & L. R. R.....	336
Jefferson.....	Oreg. & Cal. R. R.....	264
Jones Ranch, Honey Creek.....	Wheeler.....	4,466
Junction.....	Oreg. & Cal. R. R.....	345
Kenny.....	U. S. C. & G. S.....	100
Klamath, Fort.....	Wheeler.....	4,108
Do... Lake.....	Pacific R. R. Reports.....	4,131
Klamath Marsh.....	Wheeler.....	4,371
Lake View.....	Wheeler.....	4,825
Lane, Fort.....	Toner.....	1,200
Langden's Ranch.....	Wheeler.....	5,162
Lapwai.....	Toner.....	1,000
Latham.....	Oreg. & Cal. R. R.....	657
Laughlin's Pass.....	W. & O. & O. C. R. R.....	302
Lebanon.....	A. & L. R. R.....	371
Little Meadows, on E. Fork of De Chute's.....	Wheeler.....	4,258
Lodge Pole Spring.....	Wheeler.....	1,648
Logan, Camp.....	Smithsonian Inst.....	5,600
Lo-lo-che-wis Mountain.....	Wheeler.....	7,957
Luera Ranch.....	Wheeler.....	2,443
McCoy.....	W. & O. & O. C. R. R.....	191
McMinnville.....	W. & O. & O. C. R. R.....	178
Marion.....	Oreg. & Cal. R. R.....	322
Martin.....	U. S. C. & G. S.....	83
Meacham Station.....	Oreg. R. R. & Nav. Co.....	3,161
Miller's Ranch (Summer Lake).....	Wheeler.....	4,420
Milwaukee.....	Oreg. & Cal. R. R.....	117
Mosier.....	N. P. R. R.....	100
Moss's Ranch.....	Wheeler.....	4,828
Mud Springs.....	Wheeler.....	2,443

Station.	Authority.	Elevation.
		<i>Feet.</i>
Mule Spring.....	Wheeler.....	4,739
Mutton, Mount.....	Wheeler.....	3,693
Neenae Spring.....	Wheeler.....	2,914
North End Mountain.....	Wheeler.....	8,471
North Twin-lake.....	Wheeler.....	5,117
North Sands.....	U. S. C. & G. S.....	5
North Yamhill.....	W. & O. & O. C. R. R.....	204
Oak Grove.....	Wheeler.....	2,415
Oakland.....	Oreg. & Cal. R. R.....	450
Okanagon, Fort.....	Toner.....	810
Oregon City.....	Oreg. & Cal. R. R.....	99
Orford, Fort.....	Med. Dept., U. S. A.....	50
Parker.....	W. & O. & O. C. R. R.....	234
Parrish Ranch.....	Wheeler.....	3,330
Parton's Ranch (Summer Lake).....	Wheeler.....	4,498
Pauline Peak.....	Wheeler.....	7,387
Pendleton.....	Oreg. R. R. & Nav. Co.....	1,043
Pigeon.....	U. S. C. & G. S.....	24
Pigeon Point.....	U. S. C. & G. S.....	8
Pitt, Mount.....	Wheeler.....	9,818
Portland.....	Smithsonian Institution.....	150
Do.....	W. & O. & O. C. R. R.....	53
Do.....	N. P. R. R.....	43
Do ..(opposite).....	Pacific R. R. Reports.....	66
Do ..Fourth street bridge.....	.....	190
Do ..Signal Station.....	U. S. Signal Office.....	67
Prineville.....	Wheeler.....	2,899
Quinns.....	N. P. R. R.....	236
Reedville.....	W. & O. & O. C. R. R.....	253
Roseburgh.....	Oreg. & Cal. R. R.....	485
Do ..Signal Station.....	U. S. Signal Office.....	537
Round Lake.....	.....	4,671
St. Joseph.....	W. & O. & O. C. R. R.....	158
Salem.....	Oreg. & Cal. R. R.....	187
Scott, Mount.....	Wheeler.....	9,016
Shivar's Bridge, Deschutes River.....	Wheeler.....	702
Sikan Marsh.....	Wheeler.....	4,960
Six Bit House.....	.....	1,151
Skiff.....	U. S. C. & G. S.....	37
Stalco.....	N. P. R. R.....	48
Stampede Lake.....	Wallen.....	4,196
Sugar Loaf Mountain.....	Wheeler.....	8,415
Summit Pass.....	Pacific R. R. Reports.....	5,595
Tangent.....	Oreg. & Cal. R. R.....	269
Timber, Mount.....	Wheeler.....	7,519
Trontdale.....	N. P. R. R.....	60
Turner.....	Oreg. & Cal. R. R.....	310
Tygh Valley.....	Wheeler.....	1,069
Umatilla.....	Oreg. R. R. & Nav. R. R.....	277
Umatilla Junction.....	N. P. R. R.....	302
Umatilla, Signal Station.....	U. S. Signal Office.....	384
Umpqua, Fort.....	Med. Dept., U. S. A.....	8
Union.....	Oreg. R. R. & Nav. Co.....	2,793
Union Peak.....	Wheeler.....	7,298
Upper Cascades.....	Wheeler.....	127
Upper Klamath.....	.....	4,131
Vancouver (opposite).....	Pacific R. R. Reports.....	105
Vicuto.....	N. P. R. R.....	104
Wallamet.....	Smithsonian Institution.....	120
Warm Spring Agency.....	Wheeler.....	1,574
Warm Spring Indian Agency.....	Wheeler.....	1,513
Warm Springs.....	Wheeler.....	1,529
Warner, Camp.....	Wheeler.....	5,730

Station.	Authority.	Elevation.
		<i>Feet.</i>
Warner Lake Flat.....	Wheeler.....	4,544
Watumpi Lake.....		4,287
Wells.....	W. & O. & P. O. C. R. R.....	247
Willows.....	N. P. R. R.....	234
Woodland.....	U. S. C. & G. S.....	107

PENNSYLVANIA.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Abingdon Junction.....	N. Pa. R. R.....	254
Do.....	N. E. Pa. R. R.....	295
Abington.....	Del. L. & W. R. R.....	1,058
Ackley's.....	D., A. V. & P. R. R.....	1,236
Adamsville.....	A. & G. W. R. R.....	1,148
Aladdin Station.....	A. V. R. R.....	6,793
Alba.....	N. C. R. R.....	1,349
Albion.....	E. & P. R. R.....	857
Alburtis.....	C. R. R.....	445
Allegheny.....	Pa. R. R.....	1,152
Allegheny City.....	P., Ft. W. & C. R. R.....	738
Do.....Sycamore street.....	W. Pa. R. R.....	741
Do.....East Lane.....		741
Allentown, B. M. at.....	U. S. C. & G. S.....	321
Allentown.....	L. & S. R. R.....	257
Allenville.....	M. R. R.....	1,647
Allenwood.....	C. & W. R. R.....	492
Alligripus.....	Pa. R. R.....	1,920
Alpsville.....	B. & O. R. R.....	708
Alton.....	N. Y., L. E. & W. R. R.....	2,092
Alton Summit.....	N. Y., L. E. & W. R. R.....	2,140
Altoona.....	Pa. R. R.....	1,179
Do.....W. line of ticket office.....	Pa. R. R.....	1,178
Do.....front door of ticket office.....	Pa. R. R.....	1,181
Ambler.....	N. Pa. R. R.....	199
Anderson's.....	Pa. R. R.....	500
Do.....water station.....	Pa. R. R.....	499
Andover.....	L. S. & M. S. R. R.....	1,095
Angora.....	W. C. & P. R. R.....	745
Annville.....	Lebanon Valley R. R.....	442
Apollo.....	W. Pa. R. R.....	823
Apple's brick house.....	S. & N. R. R.....	558
Aqueduct.....	Pa. R. R.....	377
Ararat Summit.....	N. Y., L. E. & W. R. R.....	2,023
Archbald.....	L. R. R.....	968
Ardmore.....	Pa. R. R.....	359
Argyle.....	P. & K. C. R. R.....	1,161
Armstrong's Coal Mines.....	B. & O. R. R.....	779
Armstrong Station.....	A. V. R. R.....	746
Arnold's Station.....	A. V. R. R.....	793
Arnot.....	Tioga R. R.....	1,682
Aashland.....	N. C. R. R.....	269
Aashland Depot.....	M. & S. R. R.....	859
Aashley.....	L. & S. R. R.....	634
Aashlabula.....	N. C. & B. V. R. R.....	683
Athens Bridge.....	Lehigh Valley R. R.....	779
Athens Mills.....	P. & P. R. R.....	1,266
Auburn.....	Phil. & R. R. R.....	471
Auburn Junction.....	S. & S. R. R.....	466
Austinburgh.....	N. C. & B. V. R. R.....	815
Avery.....	M. R. R.....	979
Avon.....	Lebanon Valley R. R.....	487
Avondale.....	P. & B. C. R. R.....	227
Do.....crossing P. & B. C. R. R.....	Pa. & Del. R. R.....	2,821
Do.....opposite center of coal office.....	Del., L. & W. R. R.....	530
Babcock.....	N. Y., L. E. & W. R. R.....	1,427
Baden.....	P., Ft. W. & C. R. R.....	710
Bailey's Run.....	W. Pa. R. R.....	753

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Station.	Authority.	Elevation.
		<i>Feet.</i>
Milton	N. Y., Pa. & O. R. R.	1, 193
Mineral City	M. & C. R. R.	726
Mineral Ridge	N. Y., Pa. & O. R. R.	970
Minerva	Cin. & P. R. R.	1, 052
Mingo	Cin. & P. R. R.	687
Do	N. Y., Pa. & O. R. R.	1, 206
Monday Creek Station	C. & H. V. R. R.	689
Mouroe (summit)	D. & S. E. R. R.	1, 063
Munroeville	L. S. & M. S. R. R.	725
Montgomery's	P., C. & St. L. R. R.	800
Moonville	M. C. & C. R. R.	723
Do . . . Bench-mark on east abutment of bridge over Raccoon Creek, M. & C. R. R. .	U. S. C. & G. S.	713
Moorfield	C., C. C. & I. R. R.	1, 021
Morrison	C. N. R. R.	882
Morrow	C. & M. V. R. R.	666
Moultrie	Cin. & P. R. R.	1, 103
Mount Carmel	Cin. & P. R. R.	899
Mount Liberty	C., Mt. V. & Del. R. R.	1, 215
Mount Summit	Cin. & P. R. R.	885
Mount Vernon	B. & O. R. R.	991
Mount Victory	C., C. C. & I. R. R.	1, 036
Mount Washington	Cin. & P. R. R.	766
Munson Hill	Ash. & P. R. R.	866
Nankin	N. Y. Pa. & O. R. R.	1, 123
Napoleon	T. W. & W. R. R.	680
Navarre	C., T. V. & W. R. R.	993
Do. (Lock)	O. & E. Canal	924
Nebo	Ash. & P. R. R.	840
Nelsonville	C. & H. V. R. R.	682
Newark	P. C. & St. L. R. R.	819
Do. north end of city	B. & O. R. R.	791
New Baltimore	B. P. & C. R. R.	740
Newburgh	A. & G. W. R. R.	813
Do. grade crossing C. & P. R. R. .	A. & G. W. R. R.	748
New Carlisle	I. B. & W. R. R.	89
Newcastle (Lock)	O. & E. Canal	859
Newcomerstown	P., C. & St. L. R. R.	796
Do. (Lock)	O. & E. Canal	800
New England	M. & C. R. R.	808
New Haven	B. & O. R. R.	918
New Holland	C. & Z. R. R.	876
New Lexington	C. & M. V. R. R.	897
New Lisbon	N. Y., Pa. & O. R. R.	958
New London	C., C. C. & I. R. R.	980
New Lyme	Ash., P. R. R.	906
New Market	P., C. & St. L. R. R.	959
New Paris	P., C. & St. L. R. R.	1, 020
New Philadelphia	C., T. V. & W. R. R.	874
Do	Cin. & P. R. R.	804
Newport	C., T. V. & W. R. R.	870
New Portage	N. Y., Pa. & O. R. R.	1, 204
New Straitsville	C. & H. V. R. R.	790
Newtown	P., C. & St. L. R. R.	494
Niles	Ash. & P. R. R.	864
Do	N. Y., Pa. & O. R. R.	889
Niles Junction with N. & N. L. R. R.	A. & G. W. R. R.	890
North Bend	C., I. St. L. & C. R. R.	497
North Easton	C., C. C. & I. R. R.	811
Northfield Summit	Cin. & P. R. R.	1, 043
North Lewisburgh	N. Y., Pa. & O. R. R.	1, 082
Norwalk	L. S. & M. S. R. R.	719
Norwood	C. N. R. R.	628
Oakfield	Ash. & P. R. R.	912

Station.	Authority.	Elevation.
		<i>Feet.</i>
Loveland crossing Little Miami River.....	M. & C. R. R.....	592
Do... crossing Little Miami Railroad.....	M. & C. R. R.....	594
Lowell.....	N. C. & B. V. R. R.....	826
Lucas.....	P., Ft. W. & C. R. R.....	1,091
Lucasville.....	Scioto V. R. R.....	556
Ludlow Falls.....	I. B. & W. R. R.....	900
McCoys.....	Cin. & P. R. R.....	684
Macedonia.....	Cin. & P. R. R.....	993
McLuney.....	C. & Z. R. R.....	905
Madison.....	L. S. & M. S. R. R.....	715
Mahoning.....	A. & G. W. R. R.....	943
Do... summit.....	Cin. & P. R. R.....	1,200
Malvern.....	Cin. & P. R. R.....	998
Manchester.....	P., C. & St. L. R. R.....	1,094
Mansfield.....	B. & O. R. R.....	1,154
Do.....	P., Ft. W. & C. R. R.....	1,151
Do... B., Ft. W. & C. R. R. crossing.....	N. Y., Pa. & O. R. R.....	1,155
Do... B. & O. R. R. crossing.....	N. Y., Pa. & O. R. R.....	1,159
Mantua.....	A. & G. W. R. R.....	1,111
Marietta, crossing of Muskingum River.....	M. & C. R. R.....	640
Do... L. W. in Muskingum River.....	M. & C. R. R.....	582
Do... Wayne street depot.....	M. & P. R. R.....	611
Do... Fourth street depot.....	M. & P. R. R.....	616
Marion.....	C., C. C. & I. R. R.....	979
Do... C., C. C. & I. R. R. crossing.....	N. Y., Pa. & O. R. R.....	965
Mark Center.....	B., P. & C. R. R.....	731
Marksburgh.....	M. & P. R. R.....	680
Marshfield.....	M. & C. R. R.....	826
Martin.....	L. S. & M. S. R. R.....	606
Martin's Ferry.....	Cin. & P. R. R.....	659
Martinsville.....	M. & C. R. R.....	1,043
Do... B. M. on east abutment of M. & C. R. R. bridge.....	U. S. C. & G. S.....	1,057
Marysville.....	C., C. C. & I. R. R.....	999
Mason.....	C. N. R. R.....	827
Massillon.....	C., T., V. & W. R. R.....	944
Do.....	P., Ft. W. & C. R. R.....	954
Do.....	Wheeling & L. E. R. R.....	962
Do.....	C., T., V. & W. R. R.....	963
Do... (Lock 5).....	O. & E. Canal.....	940
Do... (Lock 5a).....	O. & E. Canal.....	934
Masterville.....	P., C. & St. L. R. R.....	936
Mauds.....	C., C. C. & I. R. R.....	759
Mannee.....	T. W. & W. R. R.....	637
Mechanicsburg.....	C., C. C. & I. R. R.....	1,058
Medina.....	C., T., V. & W. R. R.....	1,086
Melbern.....	L. S. & M. S. R. R.....	841
Mentor.....	L. S. & M. S. R. R.....	650
Mesopotamia, Geodetic Station.....	U. S. Lake Survey.....	1,172
Miami City.....	P., C. & St. L. R. R.....	744
Miamisburgh.....	C., C. C. & I. R. R.....	714
Do.....	C., H. & D. R. R.....	649
Miamiville.....	C. & Z. R. R.....	592
Do.....	P., C. & St. L. R. R.....	580
Middle Bass, Geodetic Station.....	U. S. Lake Survey.....	581
Middleton.....	C., C. C. & I. R. R.....	667
Do.....	C., H. & D. R. R.....	649
Milford.....	C. & Z. R. R.....	577
Milford.....	C. C. C. & I. R. R.....	996
Do.....	P., C. & St. L. R. R.....	552
Millbury Junction.....	L. S. & M. S. R. R.....	615
Miller's.....	P., C. & St. L. R. R.....	1,007
Millersburg.....	C., Mt. V. & Del. R. R.....	816
Millville.....	C. & H. V. R. R.....	752

Station.	Authority.	Elevation.
		<i>Feet.</i>
Milton	N. Y., Pa. & O. R. R.	1, 193
Mineral City	M. & C. R. R.	726
Mineral Ridge	N. Y., Pa. & O. R. R.	970
Minerva	Cin. & P. R. R.	1, 052
Mingo	Cin. & P. R. R.	687
Do	N. Y., Pa. & O. R. R.	1, 206
Monday Creek Station	C. & H. V. R. R.	689
Monroe (summit)	D. & S. E. R. R.	1, 063
Monroeville	L. S. & M. S. R. R.	725
Montgomery's	P., C. & St. L. R. R.	800
Moonville	M. C. & C. R. R.	723
Do . . . Bench-mark on east abutment of bridge over Raccoon Creek, M. & C. R. R. .	U. S. C. & G. S.	713
Moorfield	C., C. C. & I. R. R.	1, 021
Morrison	C. N. R. R.	882
Morrow	C. & M. V. R. R.	666
Moultrie	Cin. & P. R. R.	1, 103
Mount Carmel	Cin. & P. R. R.	899
Mount Liberty	C., Mt. V. & Del. R. R.	1, 215
Mount Summit	Cin. & P. R. R.	885
Mount Vernon	B. & O. R. R.	991
Mount Victory	C., C. C. & I. R. R.	1, 036
Mount Washington	Cin. & P. R. R.	766
Munson Hill	Ash. & P. R. R.	866
Nankin	N. Y. Pa. & O. R. R.	1, 123
Napoleon	T. W. & W. R. R.	680
Navarre	C., T. V. & W. R. R.	993
Do. (Lock)	O. & E. Canal.	924
Nebo	Ash. & P. R. R.	840
Nelsonville	C. & H. V. R. R.	682
Newark	P. C. & St. L. R. R.	819
Do. north end of city	B. & O. R. R.	791
New Baltimore	B. P. & C. R. R.	740
Newburgh	A. & G. W. R. R.	813
Do . . . grade crossing C. & P. R. R. .	A. & G. W. R. R.	748
New Carlisle	I. B. & W. R. R.	89
Newcastle (Lock)	O. & E. Canal.	859
Newcomerstown	P., C. & St. L. R. R.	796
Do . . . (Lock)	O. & E. Canal.	800
New England	M. & C. R. R.	808
New Haven	B. & O. R. R.	918
New Holland	C. & Z. R. R.	876
New Lexington	C. & M. V. R. R.	897
New Lisbon	N. Y., Pa. & O. R. R.	958
New London	C., C. C. & I. R. R.	980
New Lyme	Ash., P. R. R.	906
New Market	P., C. & St. L. R. R.	959
New Paris	P., C. & St. L. R. R.	1, 020
New Philadelphia	C., T. V. & W. R. R.	874
Do	Cin. & P. R. R.	804
Newport	C., T. V. & W. R. R.	870
New Portage	N. Y., Pa. & O. R. R.	1, 204
New Straitsville	C. & H. V. R. R.	790
Newtown	P., C. & St. L. R. R.	494
Niles	Ash. & P. R. R.	864
Do	N. Y., Pa. & O. R. R.	889
Niles Junction with N. & N. L. R. R. .	A. & G. W. R. R.	890
North Bend	C., I. St. L. & C. R. R.	497
North Easton	C., C. C. & I. R. R.	811
Northfield Summit	Cin. & P. R. R.	1, 043
North Lewisburgh	N. Y., Pa. & O. R. R.	1, 082
Norwalk	L. S. & M. S. R. R.	719
Norwood	C. N. R. R.	628
Oakfield	Ash. & P. R. R.	812

Station.	Authority.	Elevation.
		<i>Feet.</i>
Brownsville at Monongahela River.....	Cumberland Turnpike.....	873
Bruce, bench-mark.....	P. B. R. R.....	331
Bruckhart's.....	R. & C. R. R.....	425
Brush Run.....	Pa. R. R.....	933
Brushton Station.....	Pa. R. R.....	922
Bryansville.....	P. B. R. R.....	241
Bryn Mawr.....	Pa. R. R.....	416
Buchanan's.....	E. B. & W. R. R.....	672
Buchannon.....	L. C. & S. C. R. R.....	1,059
Buck Mountain.....	L. & S. R. R.....	1,620
Buffalo Station.....	W. Pa. R. R.....	766
Bulger.....	P. C. & St. L. R. R.....	1,156
Bunker Hill.....	L. & T. R. R.....	437
Do.....	N. Pa. R. R.....	528
Bunkertown.....	S. & N. R. R.....	706
Burgettstown.....	P. C. & St. L. R. R.....	1,011
Burkholder.....	Berlin R. R.....	1,932
Burning Well Station, cor. of coping, lower end, N. arch culvert, above Burning Well Station.....	A. V. R. R.....	945
Bushore.....	S., L. & S. R. R.....	1,593
Butler.....	W. Pa. R. R.....	1,008
Butler Junction.....	W. Pa. R. R.....	769
Buttsville.....	N. Y., R. & P. R. R.....	1,996
Cabeau's Station.....	L. & Q. R. R.....	389
Caledonia Tunnel, E. end.....	Bennett's Br. R. R.....	1,148
Caln.....	Pa. R. R.....	359
Cambria.....	Pickering Valley R. R.....	322
Cambridge.....	A. & G. W. R. R.....	1,163
Do.....	P. & P. R. R.....	1,158
Camden.....	P. V. & C. R. R.....	754
Cameron.....	P. & E. R. R.....	964
Do.....	Del., L. & W. R. R.....	458
Campbelltown.....	J. S., P. C. & B. R. R.....	700
Camp Ground Station.....	A. V. R. R.....	789
Camp Hill.....	N. Pa. R. R.....	178
Camp Hummel.....	T. & C. R. R.....	1,682
Canaan.....	Pa. R. R.....	1,066
Cannansburg.....	Chartiers R. R.....	935
Cantner.....	S. & M. P. R. R.....	2,108
Canton.....	N. C. R. R.....	1,261
Carbondale.....	N. Y., L. E. & W. R. R.....	1,079
Do..... Coal Brooke Breaker.....	L. R. R.....	1,086
Do..... Canal level.....		965
Carlisle.....	Cumberland Valley R. R.....	477
Do..... B. M. on base of column west side of jail entrance.....	U. S. C. & G. S.....	473
Carlton.....	A. & G. W. R. R.....	1,047
Carpenter's.....	N. C. R. R.....	1,201
Carpenter's Station.....	Pa. R. R.....	654
Castleman.....	B. & O. R. R.....	1,757
Catasauqua.....	Lehigh Valley R. R.....	282
Catawissa.....	C. & W. R. R.....	477
Do.....	D., H. & W. R. R.....	470
Catfish.....	Pa. R. R.....	968
Catfish Station, door sill telegraph office, south side.....	A. V. R. R.....	859
Cedar Hollow.....	Chester Valley R. R.....	246
Central Point.....	P. & K. C. R. R.....	1,184
Centre Hall.....	L. C. & S. C. R. R.....	1,272
Centerville.....	Chester Valley R. R.....	202
Do.....	P. F. & B. R. R.....	1,297
Chadd's Ford.....	P. & B. C. R. R.....	129
Do.....	W. & R. R. R.....	175

Station.	Authority.	Elevation.
		<i>Feet.</i>
Chambersburg	Cumberland Valley R. R.	618
Do.....B. M. on base north pillar front court-house	U. S. C. & G. S.	620
Chapman	C. & F. R. R.	541
Chapmansville	L. & L. R. R.	576
Chartier's Station	A. V. R. R.	765
Cheney	W. C. & P. R. R.	240
Chester Heights	P. & B. C. R. R.	234
Chester Springs	Pickering Valley R. R.	278
Chestnut Hill	Phil. & R. R. R.	410
Childs	B., C. & P. R. R.	1,474
Chiques	Pa. R. R.	255
Do Bridge	Pa. R. R.	351
Christiana	Pa. R. R.	491
Chulaasky	Del., L. & W. R. R.	455
Churchville	Phil. & N. R. R.	164
City Farm	B. & O. R. R.	761
Clarendon	P. & E. R. R.	1,396
Clarion Summit	P. & E. R. R.	2,024
Clark's	L. S. & M. S. R. R.	1,164
Clark's Ferry	N. C. R. R.	366
Clarksville	E. & P. R. R.	894
Claysville	B. & O. R. R.	1,143
Clearfield	T. & C. R. R.	1,103
Clearfield Creek	T. & C. R. R.	1,140
Clermont, Bishop's Summit	McK. & B. R. R.	2,074
Clifton	W. C. & P. R. R.	109
Clinton	N. C. & B. V. R. R.	900
Clyde	L. & L. R. R.	362
Coal Branch	L. S. & M. S. R. R.	1,199
Do.....Crossing	N. C. & F. R. R.	1,194
Coaldale	H. & B. T. R. R.	1,126
Coalmont	H. & B. T. R. R.	1,110
Coal Port	L. & S. R. R.	585
Coatesville	W. & R. R. R.	315
Do.....intersection of W. & R. R. R.	Pa. R. R.	380
Cobham	P. T. & B. R. R.	1,134
Coburn	L. C. & S. C. R. R.	1,026
Cochranton	A. & G. W. R. R.	1,064
Coffee Run	H. & B. T. R. R.	872
Cobocksink	N. Pa. R. R.	34
Cold Run	W. & R. R. R.	525
Cold Spring	S. & S. R. R.	874
Colebrookdale	C. R. R.	316
Coledale	L. & S. R. R.	962
Colegrove	McK. & B. R. R.	1,543
Coleman Station	A. V. R. R.	746
Cole's Station	E. Broadtop R. R.	1,369
Collegeville	Perkiomen R. R.	155
Collier	B. G. R. R.	1,642
Collins	Pa. R. R.	285
Columbia	P. T. & B. R. R.	1,067
Do.....Cross Roads	N. C. R. R.	1,148
Columbia	Pa. R. R.	251
Do.....Junction Col. Br. of Pa. R. R.	York Br. Pa. R. R.	251
Do.....Mill St	R. & C. R. R.	264
Do.....Col. Depot	R. & C. R. R.	250
Do.....Pa. R. R. Depot	C. & P. D. R. R.	251
Do.....Pa. R. R. track in front of passen- ger station	C. & P. D. R. R.	241
Columbus	A. & G. W. R. R.	1,427
Do	P. & E. R. R.	1,401
Concord	P. & B. C. R. R.	237
Do	A. & G. W. R. R.	1,361

Station.	Authority.	Elevation.
		<i>Feet.</i>
Concord.....	P. & E. R. R.....	1,384
Conemaugh.....	Pa. R. R.....	1,225
Do.....Furnace.....	Pa. R. R.....	1,135
Conestoga.....	W. & R. R. R.....	647
Conewago.....	Pa. R. R.....	422
Do.....Bridge.....	Pa. R. R.....	546
Confluence.....	B. & O. R. R.....	1,346
Connantsville.....	E. & P. R. R.....	1,066
Conneaut Pool.....	Levels.....	1,082
Connellsville.....	P. & C. R. R.....	894
Do.....	S. W. Pa. R. R.....	915
Do.....S. W. Pa. R. R.....	B. & O. R. R.....	894
Conshohocken.....	Phil. & R. R. R.....	59
Cook's.....	Chartier's R. R.....	1,003
Cook's Mills.....	B. & O. R. R.....	774
Cook's Run.....	P. & E. R. R.....	709
Cook's Station.....	E. Broadtop R. R.....	1,541
Cools.....	M. R. R.....	1,547
Cool Spring.....	S. & A. R. R.....	1,127
Coopersburg.....	N. Pa. R. R.....	549
Copeland Station.....	Pa. R. R.....	853
Coplay.....	Lehigh Valley R. R.....	296
Copper Works.....	B. & O. R. R.....	763
Cornog's.....	E., B. & W. R. R.....	361
Cornwall.....	L. & C. R. R.....	603
Cornwall's.....	Phil. & T. R. R.....	39
Corry.....	P. & E. R. R.....	1,431
Do.....grade crossing P. & E. R. R.....	A. & G. W. R. R.....	1,428
Corry Junction.....	B., C. & P. R. R.....	1,423
Do.....junction with P. & E. R. R.....	P., T. & B. R. R.....	1,433
Do.....junction with B., C. & P. R. R.....	P., T. & B. R. R.....	1,445
Do.....crossing first avenue.....	P., T. & B. R. R.....	1,439
Do.....crossing Centre street.....	P., T. & B. R. R.....	1,434
Do.....crossing P., E. & A. G. W. R. R.....	P., T. & B. R. R.....	1,431
Do.....Station.....	A. & G. W. R. R.....	1,431
Do.....grade crossing B., C. & P. R. R.....	A. & G. W. R. R.....	1,443
Coudersport.....	J. S., P. C. & B. R. R.....	1,661
Coulson.....	N. C. & F. R. R.....	1,277
Coultersville.....	B. & O. R. R.....	768
Cove.....	H. & B. T. R. R.....	921
Covert's Mills.....	N. C. & B. V. R. R.....	790
Covington.....	Tioga R. R.....	1,208
Cowanshannock Station.....	A. V. R. R.....	809
Crafton.....	P. C. & St. L. R. R.....	879
Crawford.....	H. & B. T. R. R.....	1,242
Do.....	N. Y., L. E. & W. R. R.....	2,098
Crawford's.....	A. & G. W. R. R.....	893
Crescentville.....	Phil. & N. R. R.....	95
Cresson.....	Pa. R. R.....	2,017
Do.....R. R. Junction.....	E. & C. R. R.....	2,028
Do.....switch to E. & C. R. R.....	Pa. R. R.....	2,628
Crosby.....	McK. & B. R. R.....	1,540
Crosses.....	E. & P. R. R.....	765
Cross Road.....	S. B. R. R.....	662
Cumbola.....	Schuylkill Valley R. R.....	668
Cupola.....	E. B. & W. R. R.....	565
Curwensville.....	T. & C. R. R.....	1,141
Daguschahonda.....	P. & E. R. R.....	1,480
Dahoga.....	P. & E. R. R.....	1,605
Dallastown.....	P. B. R. R.....	657
Dam.....	E. & C. R. R.....	1,960
Dampman's.....	E. B. & W. R. R.....	628
Danville.....	C. & W. R. R.....	494
Do.....	D., H. & W. R. R.....	463

Station.	Authority.	Elevation.
		<i>Feet.</i>
Danville, N. E. end depot, top of near rail.	Del., L. & W. R. R.	457
Darby	P., W. & B. R. R.	45
Darby Road	W. C. & P. R. R.	103
Darlington	P., Ft. W. & C. R. R.	981
Do	W. C. & P. R. R.	143
Dauphin, east end R. R. bridge	N. C. R. R.	349
Do, center of passenger station	N. C. R. R.	349
Davidson	S. W. Pa. R. R.	898
Dawson	P., T. & B. R. R.	1,076
Do, H. R. Br. R. R.	B. & O. R. R.	864
De Golias	N. Y., L. E. & W. R. R.	1,523
Delano Station	W. Pa. R. R.	1,224
Delaware Water Gap	Del., L. & W. R. R.	319
Delta	P. B. R. R.	435
Dent's Run Station	Bennett's Br. R. R.	926
Derry	Pa. R. R.	1,172
Dewart	P. & E. R. R.	485
Dilk's Station	W. Pa. R. R.	1,307
Dilleville Junction, Col. Branch	Pa. R. R.	359
Dillaburgh	M. & D. R. R.	542
Do, Junction	Cumberland Valley R. R.	427
Dimock	M. R. R.	1,507
Dinsmore	P., C. & St. L. R. R.	1,059
Dixmont	P., Ft. W. & C. R. R.	722
Doe Run	Pa. & Del. R. R.	374
Donaldson	L. & T. R. R.	910
Dorlans	E. B. & W. R. R.	280
Dormers	M. C. R. R.	647
Dotter's Station	A. V. R. R.	915
Douglasville	Phil. & R. R. R.	161
Dowlins Forge	E. B. & W. R. R.	274
Downington	Pa. R. R.	266
Do, terminus junction with N. track of Pa. R. R.	E. B. & W. R. R.	256
Doylestown	N. Pa. R. R.	347
Dreherstown	L. Schuyl. R. R.	494
Drifton	L. & S. R. R.	1,633
Driftwood	P. & E. R. R.	816
Do, junction with P. & E. R. R.	Bennett's Br. R. R.	813
Dunbar	P. & C. R. R.	1,011
Do	T. & C. R. R.	1,453
Duncan	L. C. & S. C. R. R.	1,078
Duncannon	Pa. R. R.	356
Duncansville	Pa. R. R.	990
Dunning's	Del., L. & W. R. R.	1,400
Dunn's Eddy	P., T. & B. R. R.	1,156
Duquesne Borough	W. P. R. R.	741
Durbin	E. & C. R. R.	1,927
Eagle Hill	Schuylkill Valley R. R.	661
Eagle Rock	P., T. & B. R. R.	1,046
Eagleville	B. E. Valley R. R.	635
Eastbrook	N. C. & F. R. R.	906
East Falls	Phil. & R. R. R.	119
East Greenburgh	S. W. Pa. R. R.	1,062
East Liberty Station	Pa. R. R.	918
East Mahanoy Junction	E. M. R. R.	1,109
Easton	Lehigh Valley R. R.	210
Do	L. & S. R. R.	215
Do, B. M. on W. corner jail	U. S. C. & G. S.	357
Do, window sill E. side C. H.	U. S. C. & G. S.	364
Easton, B. M. at	U. S. C. & G. S.	214
East Pa. R. R. Junction	Lehigh Valley R. R.	251
East Sandy Station	A. V. R. R.	975
East Titusville	D., A. V. & P. R. R.	1,178

Station.	Authority.	Elevation.
		<i>Feet.</i>
Ebensburgh.....	E. & C. R. R.....	2,022
Eckley.....	L. & S. R. R.....	1,663
Economy.....	P., Ft. W. & C. R. R.....	715
Eddington, Dunk's Ferry Road.....	Phil. & T. R. R.....	42
Edge Hill.....	N. Pa. R. R.....	293
Edgewater Station.....	A. V. R. R.....	761
Edgewood Station.....	Pa. R. R.....	923
Edgeworth.....	P., Ft. W. W. & C. R. R.....	725
Edinborough.....	P. & P. R. R.....	1,212
Do.. Geodetic Station.....	U. S. Lake Survey.....	1,603
Edinburgh.....	N. C. & B. V. R. R.....	802
Egypt.....	B. & O. R. R.....	1,302
Eldorado.....	Pa. R. R.....	1,093
Eldred.....	B., N. Y. & P. R. R.....	1,443
Elizabeth.....	P. V. & C. R. R.....	747
Elizabeth Furnace.....	Pa. R. R.....	1,079
Elizabethtown.....	Pa. R. R.....	457
Ellrod.....	B. & O. R. R.....	768
Ellwood.....	S. & S. R. R.....	673
Elm.....	Pa. R. R.....	285
Emaus Junction.....	Perkiomen R. R.....	391
Emarres Station.....	E. Pa. R. R.....	434
Embeenville.....	W. & R. R. R.....	231
Emigsville.....	N. C. R. R.....	376
Emlenton Station.....	A. V. R. R.....	905
Emporium.....	B., N. Y. & P. R. R.....	1,024
Do.....	P. & E. R. R.....	1,033
Emsworth.....	P., Ft. W. & C. R. R.....	725
Enon.....	P., Ft. W. & C. R. R.....	994
Enterprise.....	P. B. R. R.....	531
Do.....	Pithole Valley R. R.....	1,261
Enz.....	Bennett's Br. R. R.....	964
Eochwan Station.....	A. V. R. R.....	922
Ephrata.....	R. & C. R. R.....	384
Erie, Depot.....	L. S. & M. S. R. R.....	686
Do. Chestnut st., at 2d st. (Lake Bluff).....	City Levels.....	643
Do. Chesnut and 26th st.....	City Levels.....	763
Do. Water in reservoir, city water works.....	City Levels.....	808
Do. Centre of State st., at pier.....	P. & E. R. R.....	593
Do. Geodetic Station.....	U. S. Lake Survey.....	859
Do. Signal Station.....	U. S. Signal Office.....	681
Espy.....	Del., L. & W. R. R.....	490.25
Espyville.....	E. & P. R. R.....	1,088
Evans.....	P. & C. R. R.....	1,009
Evansburgh.....	A. & G. W. R. R.....	1,284
Everett.....	H. & B. T. R. R.....	1,118
Evergreen Water Station.....	Bennett's Br. R. R.....	1,398
Everson.....	S. W. Pa. R. R.....	1,034
Ewing's Mills.....	Chartier's R. R.....	978
Exeter.....	Phil. & R. R. R.....	193
Exton.....	Chester Valley R. R.....	324
Factoryville.....	Del., L. & W. R. R.....	920
Fairbanks, junction of coal road.....	W. Pa. R. R.....	933
Fairhope.....	B. & O. R. R.....	1,380
Fairmount Station.....	Bennett's Br. R. R.....	1,086
Fair Oaks.....	P., Ft. W. & C. R. R.....	715
Fairview.....	Lehigh Valley R. R.....	1,673
Fairview.....	E. & P. R. R.....	735
Do.....	W. Pa. R. R.....	741
Do.....	Pa. R. R.....	325
Fairville.....	P. & B. C. R. R.....	255
Fall Brook.....	Tioga R. R.....	1,842
Falls.....	Lehigh Valley R. R.....	587

Station.	Authority.	Elevation.
		<i>Feet.</i>
Farmer's Valley.....	McK. & B. R. R.....	1,476
Farrandsville.....	P. & E. R. R.....	583
Fayette.....	P. & C. R. R.....	921
Felton.....	P. B. R. R.....	536
Fenmore.....	P. B. R. R.....	435
Ferguson.....	S. W. Pa. Extension.....	1,139
Do.....	P. & C. R. R.....	1,138
Ferndale.....	C. & W. R. R.....	1,095
Ferney.....	P. & E. R. R.....	594
Fernwood.....	W. C. & P. R. R.....	90
Figarts.....	B. G. R. R.....	2,108
Finstman's.....	P. & C. R. R.....	1,076
Fishers Ferry.....	N. C. R. R.....	433
Fishers Summit.....	H. & B. T. R. R.....	974
Fleetwood.....	E. Pa. R. R.....	449
Forest City.....	N. Y., L. E. & W. R. R.....	1,460
Forge.....	S. & S. R. R.....	435
Forrest.....	E. B. & W. R. R.....	576
Fort Washington.....	N. Pa. R. R.....	170
Fossilville.....	Bed. & Bridge. R. R.....	1,091
Foster's Station.....	A. V. R. R.....	970
Fosterville.....	S. W. Pa. R. R.....	967
Postoria.....	Pa. R. R.....	1,029
Fountain Mills.....	P. & C. R. R.....	1,042
Foxburgh Station.....	A. V. R. R.....	897
Foxchase.....	Phil. & N. R. R.....	200
Frackville.....	M. C. R. R.....	1,479
Franklin.....	A. & G. W. R. R.....	967
Do.. Branch Junction at head block of switch.....	A. & G. W. R. R.....	1,074
Do.....	L. S. & M. S. R. R.....	1,017
Frankstown.....	B. & O. R. R.....	783
Do.....	Pa. R. R.....	918
Fraser.....	Pa. R. R.....	490
Fredonia.....	S. & A. R. R.....	1,177
Freeburgh.....	S. & N. R. R.....	509
Freedom.....	P., Ft. W. & C. R. R.....	703
Freemansburgh.....	Lehigh Valley R. R.....	225
Do.....	L. & S. R. R.....	222
Freeport, Second Station.....	W. Pa. R. R.....	772
Frenchtown.....	Lehigh Valley R. R.....	690
Frisbee.....	McK. & B. R. R.....	1,465
Fritztown.....	R. & C. R. R.....	472
Fuller's.....	Bennett's Br. R. R.....	1,327
Gaines' (Water in Pine Creek).....	J. S., P. C. & B. R. R.....	1,259
Gallaghersville.....	Pa. R. R.....	298
Gallitzin.....	Pa. R. R.....	2,161
Galusha's.....	N. Y., R. & P. R. R.....	1,432
Gap.....	Pa. R. R.....	559
Gardens.....	Chester Valley R. R.....	225
Gardner.....	C. & F. R. R.....	469
Gardner's.....	T. & C. R. R.....	1,568
Garland.....	D., A. V. & P. R. R.....	1,293
Do.....	P. & E. R. R.....	1,308
Garrett.....	B. & O. R. R.....	1,948
Garver's Ferry Station.....	A. V. R. R.....	785
Garvin.....	N. C. & F. R. R.....	1,327
Gaysport, B. M. on step of ladies' waiting room, Gaysport Station.....	Pa. R. R.....	947
Geigertown.....	W. & R. R. R.....	432
Geneva.....	A. & G. W. R. R.....	1,069
Georges Station.....	Pa. R. R.....	1,196
Georgetown.....	N. C. R. R.....	417

Station.	Authority.	Elevation.
		<i>Fect.</i>
Germantown Depot	Phil. & R. R. R.	215
Gilesville	N. Y., L. E. & W. R. R.	2,016
Gillett's	N. C. R. R.	1,187
Girard	L. S. & M. S. R. R.	717
Girard Junction	E. & P. R. R.	697
Girard Manor Station	C. & W. R. R.	1,407
Girardville	M. & S. R. R.	1,021
Glasgow	C. R. R.	165
Glatfelters	N. C. R. R.	335
Glen Carbon	M. H. & S. H. R. R.	1,124
Glencoe	B. & O. R. R.	1,023
Glendale	P., Ft. W. & C. R. R.	721
Glendon	L. & S. R. R.	215
Glen Hall	W. & R. R. R.	218
Glenlock	Pa. R. R.	453
Glen Mill	W. C. & P. R. R.	199
Glen Onoko	Lehigh Valley R. R.	591
Glen Riddle	W. C. & P. R. R.	160
Glen Rock	N. C. R. R.	551
Glen Union	P. & E. R. R.	605
Glyndon	P., T. & B. R. R.	1,348
Gold Mine	S. & S. R. R.	799
Goldsboro	N. C. R. R.	304
Goods	Pa. R. R.	1,006
Gordonville	Pa. R. R.	385
Gowan	D., H. & W. R. R.	999
Graham's	N. C. & F. R. R.	907
Grand Valley	D., A. V. & P. R. R.	1,341
Grant	Bennett's Br. R. R.	975
Granville	N. C. R. R.	1,368
Do	Pa. R. R.	498
Grapeville Station	Pa. R. R.	1,059
Graters Ford	Perkiomen R. R.	149
Graybills	Perkiomen R. R.	426
Gray's Mills	P., T. & B. R. R.	1,279
Great Belt City, road crossing	W. Pa. R. R.	1,260
Great Bend	Del., L. & W. R. R.	879
Do	N. Y., L. E. & W. R. R.	884
Greencastle	Cumberland Valley R. R.	585
Do	B. M. on center of cross in stone in front wall P. R. Depot ...	
	U. S. C. & G. S.	589
Green Land	Perkiomen R. R.	246
Greensburg Junction	S. W. Pa. R. R.	1,070
Greensburg Station	Pa. R. R.	1,091
Green Tree	Pa. R. R.	543
Greenville	Del., L. & W. R. R.	1,185
Do	A. & G. W. R. R.	984
Do	E. & P. R. R.	961
Greenwood	B. R. R.	823
Do	W. C. & P. R. R.	218
Greer's	Chartiers R. R.	903
Grey's Ferry Bridge	P., W. & B. R. R.	37
Grinders	W. Pa. R. R.	827
Grove	B. & O. R. R.	784
Do	P. & E. R. R.	772
Grover	N. C. R. R.	1,220
Gum Stump	B. & S. S. R. R.	1,020
Guth's	C. & F. R. R.	491
Guyer, Half Moon Gap	L. C. & S. R. R.	1,144
Gwynedd	N. Pa. R. R.	271
Hadley	L. S. & M. S. R. R.	1,071
Hadley's	L. S. & M. S. R. R.	1,070
Halifax	N. C. R. R.	381
Halls Station	C. & W. R. R.	513

Station.	Authority.	Elevation.
		<i>Feet.</i>
Halls Station..on Catawissa R. R., east bank of river.....	M. C. R. R.	513
Harrisburg.....	Phil. & R. R. R.	375
Hamlin	McK. & B. R. R.	1,557
Hammersville.....	W. Pa. R. R.	743
Hammonds	Pa. R. R.	1,133
Hampton	N. Pa. R. R.	276
Do.....	W. & R. R. R.	223
Hanger's.....	B. V. R. R.	2,073
Hanlon's	P., C. & St. L. R. R.	949
Hannah.....	B. E. Valley R. R. R.	1,057
Hanover	L. & S. R. R.	654
Do.....	Pa. R. R.	599
Hanover Junction.....	F. C. R. R.	442
Hantos	L. & S. R. R.	1,005
Harbison Station.....	W. P. R. R.	802
Harbor Creek	L. S. & M. S. R. R.	731
Harnish's Station	L. & Q. R. R.	309
Harrisburg, depot	Pa. R. R.	320
Do.... W. line of depot.....	Pa. R. R.	321
Do.... curbstone at lamp post, United States Hotel.....	Pa. R. R.	321
Do.... W. line of Lebanon Valley Depot.....	Pa. R. R.	322
Do.... W. line of State street	Pa. R. R.	326
Do.... junc. with Pa. R. R. & N. C. R. R.	Cumberland Valley R. R.	322
Do.... top of N. rail, main east bound track, center of Market street (Pa. R. R.).....	Cumberland Valley R. R.	321
Do.... top of N. rail, W. line of State st. (Pa. R. R.).....	Cumberland Valley R. R.	327
Do.... top of N. rail, opposite 106th mile post (Pa. R. R.).....	Cumberland Valley R. R.	330
Do.... top of N. rail at weighing scales, W. line of house, near 106th mile post	Cumberland Valley R. R.	334
Do.... top of north witness stone to meridian post, near the east entrance to State Capitol building	Cumberland Valley R. R.	364
Do.... B. M. on sandstone coping, near base of column, S. E. corner of vestibule, east entrance to State Capitol building (marked thus +).....	Cumberland Valley R. R.	368
Do.... B. M. on slaty limestone rock in river bed, about 20 ft. S. from S. line of C. V. R. R. bridge, and 60 feet S. fr. 1st pier, 2 ft. above low-water mark.....	Cumberland Valley R. R.	292
Harrisburg, top of S. rail, E. end of C. V. R. R. bridge	Cumberland Valley R. R.	332
Harrisburg, top of S. rail, W. end of C. V. R. R. bridge	Cumberland Valley R. R.	353
Harrisburg, B. M. on projecting course of stone work at base of 1st pier, S. W. cor. W. end of C. V. R. R. bridge.....	Cumberland Valley R. R.	297
Harrisburg, B. M. on center of top surface of monument in capitol grounds	U. S. C. & G. S.	357
Harrisburg, B. M. on base pillar at S. E. corner capitol building	U. S. C. & G. S.	367
Harrisville	S. & A. R. R.	1,340
Hartsville	N. E. Pa. R. R.	242
Hatfield	N. Pa. R. R.	311
Hatsborough	N. Pa. R. R.	229

Station.	Authority.	Elevation.
		<i>Feet.</i>
Haugus.....	Berlin R. R.....	2,073
Hawk Eye.....	S. W. P. A. R. R.....	1,067
Hawkins Station.....	Pa. R. R.....	853
Hawk Switch.....	N. Valley R. R.....	1,221
Hawley.....	Del. & Hudson Canal.....	880
Do.....	N. Y., L. E. & W. R. R.....	899
Haysville.....	P., Ft. W. & C. R. R.....	721
Hazardville.....	L. & S. R. R.....	417
Hazelwood.....	B. & O. R. R.....	789
Heathville.....	Bennett's Br. R. R.....	1,161
Hecla.....	L. Schuyl. R. R.....	590
Heidelberg.....	Lebanon Valley R. R.....	379
Heilmansdale.....	L. & T. R. R.....	515
Heistand's.....	York Branch P. R. R.....	437
Helena.....	W. Pa. R. R.....	1,017
Hellam.....	York Branch P. R. R.....	348
Hellertown.....	N. Pa. R. R.....	276
Hemlock.....	P. & E. R. R.....	1,464
Hemphill.....	W., C. & P. R. R.....	318
Henderson's.....	Chester Valley R. R.....	165
Henrietta Junction.....	Pa. R. R.....	1,391
Henry's Bend.....	P., T. & B. R. R.....	1,035
Henryville.....	Del., L. & W. R. R.....	596
Herman.....	W. Pa. R. R.....	1,301
Herndon Junction.....	M. & S. R. R.....	431
Herrick Center.....	N. Y., L. E. & W. R. R.....	1,770
Herrold's Saw-Mill.....	S. & N. B. R. R.....	415
Hess Station.....	L. & Q. R. R.....	494
Hestonville.....	Pa. R. R.....	143
Hexenberg.....	U. & N. F. R. R.....	1,415
Hibernia.....	W. & R. R. R.....	530
Hickory.....	P., T. & B. R. R.....	1,091
Hickory Run.....	Lehigh Valley R. R.....	1,016
Hick's Ferry.....	Del., L. & W. R. R.....	521
High Bridge.....	N. Y. & N. R. R.....	8
Highland.....	P., Ft. W. & C. R. R.....	1,043
High Rock, B. M.....	P. B. R. R.....	383
Highspire.....	Pa. R. R.....	300
Hill's.....	Chartiers R. R.....	880
Hillsborough.....	Cumberland Tp'k.....	1,750
Hillside.....	Pa. R. R.....	1,129
Hill's Mills.....	W. Pa. R. R.....	780
Hilltop.....	N. Pa. R. R.....	555
Hilltown.....	N. C. & B. V. R. R.....	799
Hillville Station.....	A. V. R. R.....	865
Hoggsett's.....	P. & C. R. R.....	978
Hoggsett's Mill.....	S. W. Pa. Extension.....	961
Hokendangua.....	Lehigh Valley R. R.....	295
Holliday.....	C., C. & A. R. R.....	1,151
Hollidaysburg.....	Pa. R. R.....	953
Do..... draw-bridge	Pa. R. R.....	942
Homestead.....	P., V. & C. R. R.....	761
Hometown.....	N. Valley R. R.....	1,176
Homewood.....	Pa. R. R.....	923
Do..... N. C. & B. V. R. R.....	P., Ft. W. & C. R. R.....	949
Do..... P., Ft. W. & C. R. R.....	N. C. & B. V. R. R.....	950
Honesdale.....	Del. & Hudson Canal.....	965
Do.....	N. Y., L. E. & W. R. R.....	966
Honeybrook.....	W. & R. R. R.....	596
Honeycreek.....	M. & C. Co. R. R.....	647
Hood's Road.....	W. C. R. R.....	595
Hopbottom.....	D., L. & W. R. R.....	893
Hope Mills.....	N. C. & F. R. R.....	1,107
Hopes.....	L. & S. R. R.....	219

Station.	Authority.	Elevation.
		<i>Feet.</i>
Hopewell	H. & B. T. R. R.	898
Houston's	Chartiers R. R.	949
Do	Pa. R. R.	1,056
Howard	B. F. Valley R. R.	679
Howard Hill	N. Y., L. E. & W. R. R.	2,230
Do.....Summit	N. Y., R. & P. R. R.	2,235
Howellville	Chester Valley R. R.	221
Huffs	S. W. Pa. R. R.	1,001
Hughsville	M. C. R. R.	600
Hulton Station	A. V. R. R.	778
Hummelstown	Lebanon Valley R. R.	376
Hunkers	S. W. Pa. R. R.	945
Hunter	P., T. & B. R. R.	1,061
Hunters	M. R. R.	1,547
Huntingdon	H. & B. T. R. R.	621
Huntingdon Valley	Phil. & N. R. R.	117
Huntley	P. & E. R. R.	861
Hydetown	P., T. & B. R. R.	1,252
Hyner	P. & E. R. R.	644
Idlewood	P., C. & St. L. R. R.	847
Imperial	P., T. & B. R. R.	1,008
Indian Creek	B. & O. R. R.	990
Ingram	P., C. & St. L. R. R.	871
Iona Station	A. V. R. R.	748
Iowa Mills	Bennett's Br. R. R.	1,299
Iron Bridge	Pa. R. R.	496
Do	P. & C. R. R.	1,051
Iron Stone	C. R. R.	312
Irvineton	D., A. V. & P. R. R.	1,164
Do	P. & E. R. R.	1,172
Irvineton Junction, with P. & E. R. R.	P., T. & B. R. R.	1,171
Irving	L. & T. R. R.	499
Irwins Station	Pa. R. R.	884
Isabella	W. R. R. R.	639
Jackson	D., A. V. & P. R. R.	1,181
Jackson Centre	N. C. & F. R. R.	1,257
Jackson's	P. & E. R. R.	1,230
Jack's Run	P., Ft. W. & C. R. R.	728
Jacktown	Pa. R. R.	595
Jacob's Creek	B. & O. R. R.	797
Do	S. W. Pa. R. R.	1,034
Jacob's Mill	Pa. R. R.	504
Jamestown	L. S. & M. S. R. R.	990
Do.....crossing E. & P. R. R.	L. S. & M. S. R. R.	990
Do.....crossing Franklin Division, L. S. & M. S. R. R.	E. & P. R. R.	979
Jamison	P., T. & B. R. R.	1,073
Jeddo	L. & S. R. R.	1,618
Jefferson	S. & S. R. R.	531
Jenkintown Junction	N. Pa. R. R.	203
Jermyn	L. R. R.	971
Jersey Mills	J. S., P. C. & B. R. R.	653
Jersey Shore	P. & E. R. R.	593
Do.....Main street	J. S., P. C. & B. R. R.	548
Joanna	W. & R. R. R.	627
Johnsburgh	N. Y., L. E. & W. R. R.	1,461
Do	P. & E. R. R.	1,442
John's Mines	M. C. R. R.	805
Johnson's	Chartiers R. R.	971
Johnson Station	A. V. R. R.	760
Johnstown	Pa. R. R.	1,184
Jones' Ferry	P., C. & St. L. R. R.	757
Jonestown	L. & T. R. R.	422
Julian	B. E. Valley R. R.	851

Station.	Authority.	Elevation.
		<i>Feet.</i>
Junction with P., Ft. W. & C. R. R.	W. Pa. R. R.	739
Kalmia Colliery	L. & T. R. R.	1,237
Kane	P. & E. R. R.	2,014
Karn's	W. Pa. R. R.	768
Karns City	P. & K. C. R. R.	1,204
Kassons	E. & P. R. R.	1,111
Kantz P. O., water's edge, ordinary low water, middle creek	S. & N. R. R.	448
Kearney's Station	Pa. R. R.	1,048
Keating	P. & E. R. R.	718
Do... (Summit)	B., N. Y. & P. R. R.	1,881
Keensville	S. & N. B. R. R.	447
Kelley Station	A. V. R. R.	781
Kelly, State Agricultural College		1,111
Kelleyville	W. C. & P. R. R.	102
Kennett Square	P. & B. C. R. R.	260
Keystone	M. & S. R. R.	1,033
Do... Keystone Coal and Manf. Co.	S. R. R.	1,976
Kilbourne's (Water, Pine Creek)	J. S., P. C. & B. R. R.	1,301
Kimberton	Pickering Valley R. R.	211
Kimbles	N. Y., L. E. & W. R. R.	851
King of Prussia	Chester Valley R. R.	190
Kingston	Del., L. & W. R. R.	562
Kinzers	Pa. R. R.	464
Kinzua	N. Y., R. & P. R. R.	1,956
Kinzua Viaduct	N. Y., L. E. & W. R. R.	2,110
Kipp's Run	D., H. & W. R. R.	463
Kirkland	W. C. R. R.	548
Kittanning	Pa. R. R.	1,594
Do.... top of curbstone on street corner in front of Valley Central Hotel	A. V. R. R.	810
Kline's Grove	D., H. & W. R. R.	445
Kofles Gap	N. Pa. R. R.	530
Krebs	C. & W. R. R.	1,225
Laceyville	Lehigh Valley R. R.	658
Lackawanna	Del., L. & W. R. R.	637
Do	N. Y., L. E. & W. R. R.	648
Do... Junction	Lehigh Valley R. R.	569
La Fayette	Phil. & R. R. R.	53
Lagrange	Lehigh Valley R. R.	598
Lakeville	U. & T. R. R.	1,412
Lamoka	B. R. R.	1,042
Lamokin Junction	P., W. & B. R. R.	37
Lancaster Junction	R. & C. R. R.	378
Do... B. M. on stone wall, Lancaster Locomotive Works	Pa. R. R.	359
Lancaster Pike	E. B. & W. R. R.	696
Landingville	Phil. & R. R. R.	503
Landisburgh	Levels	740
Landisville	R. & C. R. R.	404
Do... R. & Col. R. R. Crossing	Pa. R. R.	405
Lanes Mill	N. Y., R. & P. R. R.	1,487
Langdons	P. & E. R. R.	1,735
Langdon Furnace	M. C. R. R.	717
Lansdale Junction	N. Pa. R. R.	368
Larabee	B., N. Y. & P. R. R.	1,481
Larimer's Station	Pa. R. R.	866
Latrobe	Pa. R. R.	1,006
Laubachs	L. & S. R. R.	304
Laughlin	B. & O. R. R.	770
Laurel	P. B. R. R.	412
Do	W. & E. R. R.	241

Station.	Authority.	Elevation.
		<i>Feet.</i>
Laurel Hill.....	Levels.....	2,495
Laurel Run.....	B. & O. R. R.....	856
Laurelton.....	L., C. & S. C. R. R.....	607
Laury's.....	Lehigh Valley R. R.....	329
Lawrence Junction.....	N. C. & B. V. R. R.....	774
Lawrenceville.....	Tioga R. R.....	1,006
Do..... Station.....	Pa. R. R.....	780
Lawsonham.....	Bennett's Br. R. R.....	919
Do.....	A. V. R. R.....	916
Layton.....	B. & O. R. R.....	818
Leaman Place.....	Pa. R. R.....	382
Leadale.....	Chartiers R. R.....	794
Leatherwood.....	Bennett's Br. R. R.....	1,027
Lebanon.....	Lebanon Valley R. R.....	468
Do..... Junction.....	L. & T. R. R.....	468
Do..... B. M. on center of cross in front of wall of Saint Mary's Church...	U. S. C. & G. S.....	475
Do..... B. M. on top of marble post, corner 8th and Church streets, grounds of P. L. Weiner.....	U. S. C. & G. S.....	466
Le Boeuf.....	P. & E. R. R.....	1,217
Lees.....	Chester Valley R. R.....	279
Leesburg.....	N. C. & F. R. R.....	1,045
Leesport.....	Phil. & R. R. R.....	298
Leetsdale.....	P., Ft. W. & C. E. R.....	715
Lehigh Gap.....	L. & S. R. R.....	393
Do.....	Lehigh Valley R. R.....	389
Lehighton.....	L. & S. R. R.....	494
Do.....	Leigh Valley R. R.....	466
Lemon.....	M. R. R.....	1,041
Lemont.....	L., C. & S. C. R. R.....	1,002
Do.....	S. W. Pa. Extension.....	1,030
Lemont's.....	P. & C. R. R.....	1,084
Lenape.....	W. & R. R. R.....	183
Lenni.....	W., C. & P. R. R.....	136
Leonard's Point.....	T. & C. R. R.....	1,306
Lewisburgh.....	L., C. & S. C. R. R.....	466
Lewis' Mills.....	E. B. & W. R. R.....	542
Lewiston.....	Pa. R. R.....	498
Do..... junction with Pa. R. R.....	Mifflin & Center Co. R. R.....	499
Liberty.....	B., N. Y. & P. R. R.....	1,646
Do..... Spring.....	T. & C. R. R.....	1,103
Ligonier.....	Ligonier Valley R. R.....	1,748
Lilly.....	E. & C. R. R.....	2,030
Lillys.....	Pa. R. R.....	1,887
Limerick.....	Phil. & R. R. R.....	138
Lime Ridge.....	Del., L. & W. R. R.....	509
Lime Valley Station.....	L. & Q. R. R.....	384
Lincolnville.....	U. & T. R. R.....	1,382
Linden.....	P. & E. R. R.....	533
Do..... Surface of canal.....	J. S., P. C. & B. R. R.....	528
Lindorf's Summit.....	Pa. R. R.....	1,185
Lineville.....	E. & P. R. R.....	1,033
Linwood.....	P., W. & B. R. R.....	31
Lititz.....	R. & C. R. R.....	375
Little Cooley.....	P. & P. R. R.....	1,203
Littletown.....	Pa. R. R.....	619
Livengood's Mill.....	S. R. R.....	2,001
Livermore.....	W. Pa. R. R.....	945
Liverpool.....	N. C. R. R.....	396
Do..... Center of Market street.....	S. & N. R. R.....	409
Lloyd's Junction.....	B. G. R. R.....	2,167
Lock Haven, junction with B. E. V. R. R.....	P. & E. R. R.....	556
Lockport.....	L. & S. R. R.....	356

Station.	Authority.	Elevation.
		<i>Feet.</i>
Lockport.....	Pa. R. R.....	1,054
Lock Ridge.....	C. & F. R. R.....	440
Locust Gap Junction.....	M. & S. R. R.....	1,037
Logan.....	M. & C. Co. R. R.....	512
Logan's Ferry Station.....	A. V. R. R.....	757
Logansport Station.....	A. V. R. R.....	785
Long Run.....	B. & O. R. R.....	765
Lovells.....	P. & E. R. R.....	1,364
Lower Catasauqua.....	L. & S. R. R.....	271
Lowrie, at Warrior's Mark.....	L. C. & S. C. R. R.....	1,109
Ludlow.....	P. & E. R. R.....	1,603
Lutzville.....	Bed. & Bridge. R. R.....	1,045
Lycoming Creek Bridge.....	C. & W. R. R.....	529
Lykenstown.....	S. B. R. R.....	677
Lykens V. R. R. Junction.....	N. C. R. R.....	380
Lynn.....	M. R. R.....	1,032
Lyon (Pa. Furnace).....	L. C. & S. C. R. R.....	1,074
Lyons.....	E. Pa. R. R.....	471
McAlisterville.....	S. & N. R. R.....	661
McAuley.....	C. & W. R. R.....	759
McCalls.....	W. C. R. R.....	463
McCall's Ferry.....	C. & P. D. R. R.....	169
McCandless.....	A. V. R. R.....	740
McClintock.....	P., T. & B. R. R.....	1,058
McConnellstown.....	H. & B. T. R. R.....	674
McDonald's.....	P., C. & St. L. R. R.....	979
McKean's Corner.....	P. & P. R. R.....	1,053
McKee's Half Falls.....	S. & N. B. R. R.....	41:
McKeesport.....	B. & O. R. R.....	765
McKune's.....	Lehigh Valley R. R.....	598
McMinns Summit.....	N. Y., R. & P. R. R.....	1,615
McVeytown.....	Pa. R. R.....	592
Magee.....	P., T. & B. R. R.....	1,131
Magee's.....	Phila. & R. R. R.....	64
Maghee's.....	Bennett's Br. R. R.....	1,387
Mahanoy City Depot.....	E. M. R. R.....	1,343
Mahantonga.....	N. C. R. R.....	405
Mahonington.....	N. C. & B. V. R. R.....	789
Mainville.....	D., H. & W. R. R.....	589
Maltby Station.....	Del., L. & W. R. R.....	558
Malvern.....	Pa. R. R.....	546
Manatawny.....	C. R. R.....	192
Manayunk.....	Phil. & R. R. R.....	57
Do.....	Pa. R. R.....	519
Manchester.....	W. C. & P. R. R.....	211
Manheim.....	R. & C. R. R.....	402
Mauns.....	M. & C. Co. R. R.....	573
Mann's Choice.....	Bed. & Bridge. R. R.....	1,136
Manor.....	W. & R. R. R.....	572
Do Station.....	Pa. R. R.....	942
Manonville.....	A. V. R. R.....	798
Mansfield.....	Tioga R. R.....	1,140
Do, junction with Chartiers R. R.....	P., C. & St. L. R. R.....	773
Mantua.....	Pa. R. R.....	101
Mapleton.....	Pa. R. R.....	593
Marcy.....	M. R. R.....	965
Marietta.....	Pa. R. R.....	260
Marklesburg.....	H. & B. T. R. R.....	789
Martha.....	B. E. Valley R. R.....	912
Do, Furnace.....	Pa. R. R.....	1,054
Martinsburg.....	P. & K. C. R. R.....	1,104
Do.....	Pa. R. R.....	1,366
Do, junction.....	Pa. R. R.....	1,344
Marysville.....	Pa. R. R.....	350

Station.	Authority.	Elevation.
		<i>Feet.</i>
Marysville . W. end of R. R. bridge	N. C. R. R.	349
Do B. M. on hard sandstone, per-		
pendicular from S. line of		
bridge, about 40 feet W. of		
1st pier	N. C. R. R.	312
Masontown, Barclay R. R. Bridge	B. R. R.	794
Mauch Chunk	Lehigh Valley R. R.	544
Do	L. & S. R. R.	532
Maysville	Bennett's Br. R. R.	1,108
Meadville	A. & G. W. R. R.	1,080
Mechanicsburgh	Cumberland Valley R. R.	436
Do junc. with C. Valley R. R.	M. & D. R. R.	427
Media	W. C. & P. R. R.	210
Medic's Run Bridge, B. M. on top of cap-		
ston, N. E. cor., W.		
abutment	Bennett's Br. R. R.	1,097
Mehoopany	Lehigh Valley R. R.	634
Mellvale	N. C. R. R.	168
Menge's Mill	Pa. R. R.	455
Mercer	N. C. & F. R. R.	1,097
Do	S. & A. R. R.	1,108
Merion	Pa. R. R.	247
Do	Phil. & H. R. R.	81
Mertztown	E. Pa. R. R.	455
Meshopper	Lehigh Valley R. R.	644
Mexico	Pa. R. R.	433
Meyersdale	S. R. R.	1,964
Do L. & B. R. R.	B. & O. R. R.	2,065
Meyer's Switch	P. T. & B. R. R.	1,243
Middaugh's	N. Y., L. E. & W. R. R.	615
Middlebury	C. C. & A. R. R.	1,178
Middleport	Schuylkill Valley R. R.	724
Middlesex	E. & P. R. R.	833
Middletown	Pa. R. R.	314
Middletown Ferry	N. C. R. R.	307
Middletown Junction, Col. Br.	Pa. R. R.	314
Midmont	N. Y., L. E. & W. R. R.	2,101
Midway	L. S. & M. S. R. R.	996
Do	Pa. R. R.	394
Do	P., C. & St. L. R. R.	1,106
Mifflin	L. & T. R. R.	490
Do	Pa. R. R.	441
Mifflinburgh	L., C. & S. C. R. R.	565
Mifflin Cross-roads	D., H. & W. R. R.	811
Mile Post	A. V. R. R.	746
Milesburgh	Bellefonte Branch R. R.	700
Milford	S. & M. P. R. R.	1,932
Mill Creek	Pa. R. R.	604
Mill Creek Junction	M. C. R. R.	633
Miller, Logan's Run	L., C. & S. C. R. R.	1,070
Millers	A. & G. W. R. R.	1,169
Do	S. L. & S. R. R.	1,330
Millersburgh	S. B. R. R.	397
Do junction with L. V. C. R. R.	N. C. R. R.	396
Miller's Farm	P. T. & B. R. R.	1,131
Miller's Mill	S. & N. R. R.	487
Miller's Station	Bennett's Br. R. R.	905
Millerstown	E. Pa. R. R.	383
Do	Pa. R. R.	408
Millerton	T. & E. & S. L. R. R.	1,246
Millgrove	Yough. R. R.	867
Mill Hall	B. & E. Valley R. R.	573
Mill Lane	Chester Valley R. R.	315
Millmont	L., C. & S. C. R. R.	585

Station.	Authority.	Elevation.
		<i>Feet.</i>
Millvale Station.....	Pa. R. R.....	833
Mill Village.....	A. & G. W. R. R.....	1,216
Millville.....	N. Y., L. E. & W. R. R.....	780
Do.....	Bennett's Br. R. R.....	1,093
Millwood.....	Pa. R. R.....	1,155
Milroy.....	M. & C. Co. R. R.....	746
Milton.....	P. & E. R. R.....	473
Do.....	C. & W. R. R.....	465
Mineral Point.....	Pa. R. R.....	1,414
Do..... junction with B. & O. R. R., Pittsburgh Division.....	S. & M. P. R. R.....	1,824
Do..... S. & M. P. R. R. junction.....	B. & O. R. R.....	1,825
Minersville.....	M. H. & S. H. R. R.....	700
Mingo.....	Phil. & R. R. R.....	116
Minnequa.....	N. C. R. R.....	1,230
Mintzer's.....	C. & W. R. R.....	964
Modena.....	W. & R. R. R.....	278
Mohrsville.....	Phil. & R. R. R.....	302
Monckton.....	N. C. R. R.....	344
Monocacy.....	Phil. & R. R. R.....	162
Monongahela City.....	P. V. & C. R. R.....	753
Monroe Station.....	W. Pa. R. R.....	840
Monroeton, junction with S., L. & E. R. R.....	B. R. R.....	762
Mont Alto Junction.....	Cumberland Valley R. R.....	714
Do..... near the furnace.....	Mt. A. R. R.....	968
Montandon, junction of L. C. & S. C. R. R.....	P. & E. R. R.....	462
Monterey Station.....	A. V. R. R.....	875
Montgomery.....	C. & W. R. R.....	486
Do.....	P. & E. R. R.....	490
Montoursville.....	C. & W. R. R.....	525
Montrose.....	M. R. R.....	1,656
Montrose Station.....	Del., L. & W. R. R.....	1,053
Mooreheads.....	L. S. & M. S. R. R.....	768
Moorestburgh.....	C. & W. R. R.....	618
Moore's.....	P., W. & B. R. R.....	94
Moorestown.....	E. B. & W. R. R.....	443
Moravia.....	N. C. & B. V. R. R.....	806
Moredale.....	H. & B. T. R. R.....	1,680
Morgans.....	P. & C. R. R.....	944
Morganza.....	Chartiers R. R.....	938
Morning Side Station.....	A. V. R. R.....	747
Morrisville, N. E. side of Wash. street.....	Phil. & T. R. R.....	34
Morton.....	W. C. & P. R. R.....	121
Mortonville.....	W. & R. R. R.....	260
Moscow.....	Del., L. & W. R. R.....	1,558
Mount Bartow.....	C. R. R.....	469
Mount Braddock.....	S. W. Pa. Extension.....	1,203
Do.....	P. & C. R. R.....	1,175
Mount Carbon.....	Phil. & R. R. R.....	606
Mount Carmel.....	N. C. R. R.....	1,054
Mount Dallas.....	Bed. & Bridge. R. R.....	1,053
Mount Eagle.....	B. E. Valley R. R.....	662
Mount Joy, east side of R. R. hotel.....	Pa. R. R.....	366
Mount Pleasant.....	Bennett's Branch R. R.....	999
Do.....	T. & C. R. R.....	1,784
Do.....	P. & C. R. R.....	1,086
Mount Union, junction of E. B. T. R. R. (narrow gauge).....	Pa. R. R.....	597
Mountville.....	Pa. R. R.....	404
Mount Wolf.....	N. C. R. R.....	376
Muddy Creek Forks, B. M.....	P. B. R. R.....	367
Mud Pike.....	S. & M. P. R. R.....	2,016
Muncy.....	C. & W. R. R.....	495
Do.....	P. & E. R. R.....	519

Station.	Authority.	Elevation.
		<i>Feet.</i>
Munroe	Cumberland Tp'k	1,065
Murdocks	Pa. R. R	1,626
Murray	L. & T. R. R	456
Myerstown	Lebanon Valley R. R	474
Nagney	M. & C. Co. R. R	678
Nanticoke	Del., L. & W. R. R	538
Napier	Bed. & Bridge. R. R	1,108
Naples	L. S. & M. S. R. R	1,165
Nashua	E. & P. R. R	821
Natrona	W. Pa. R. R	768
Nelson	C., C. & A. R. R	1,186
Do	N. C. & F. R. R	1,060
Neshanock Falls	N. C. & F. R. R	992
Nesquehoning	N. Valley R. R	801
New Albany	S. L. & S. R. R	1,197
New Berlin	C. R. R	364
Newberry	P. & E. R. R	529
New Bethlehem	Bennett's Branch R. R	1,080
New Bridge	H. & B. T. R. R	831
New Brighton	P., Ft. W. & C. R. R	750
New Buffalo, water in mill-race	S. & N. B. R. R	377
New Castle	M. C. R. R	876
Do junction with N. C. Br. of P., Ft. W. & C. R. R	E. & P. R. R	809
Do junction with E. & P. R. R	N. C. & B. V. R. R	803
Do junction with N. C. & B. V. R. R. half mile south of city	N. C. & F. R. R	793
New Castle Pool	Levels	799
New Columbia	C. & W. R. R	477
New Cumberland	N. C. R. R	312
New Florence	Pa. R. R	1,076
New Freedom	N. C. R. R	827
New Gallilee	P., Ft. W. & C. R. R	957
New Hamburg	S. & A. R. R	1,158
New Haven	S. W. Pa. Extension	893
Newkirk	S. Valley R. R	912
New Milford	Del., L. & W. R. R	1,087
New Philadelphia	S. Valley R. R	690
Newport	Lehigh Valley R. R	1,023
Do	N. C. & B. V. R. R	812
Do	Pa. R. R	395
New Providence Station	L. & Q. R. R	401
Newton	D., A. V. & P. R. R	1,411
Newton Hamilton	Pa. R. R	599
Newton's Mills	P. & P. R. R	1,258
Newtown	Phil. & N. R. R	145
Newville	Cumberland Valley R. R	533
New York Junction	Phil. & R. R. R	105
Nicetown	Phil. & R. R. R	139
Nicholson	Del., L. & W. R. R	769
Nigger Hill	N. Pa. R. R	452
Niles Valley	C., C. & A. R. R	1,192
Nineveh	Pa. R. R	1,121
Do junction	N. Y., L. E. & W. R. R	981
Noble's	U. & T. R. R	1,298
Noblestown	P., C. & St. L. R. R	926
Norristown	Phil. & R. R. R	75
Northbrook	W. & R. R. R	209
North East	L. S. & M. S. R. R	805
North Pa. R. R. junction	Lehigh Valley R. R	237
North Point	P. & E. R. R	659
Northumberland, intersection with Blooms- burgh Division D., L. & W. R. R	S. & N. B. R. R	452

Station.	Authority.	Elevation.
		<i>Feet.</i>
Northumberland, junction of Del., L. & W. R. R.	P. & E. R. R.	454
Do. S. E. line of depot.	Del., L. & W. R. R.	452
North Warren	D., A. V. & P. R. R.	1,216
North West	W. Pa. R. R.	894
Oakdale	B. & O. R. R.	849
Do.	P., C. & St. L. R. R.	906
Oak Hill Station	Pa. R. R.	750
Oakland	Chester Valley R. R.	301
Do.	Del., L. & W. R. R.	1,011
Oakley's	Del., L. & W. R. R.	945
Oaks	Perkiomen R. R.	130
O'Harra	E. & C. R. R.	2,015
Ohio Pyle	B. & O. R. R.	1,237
Oil City	L. S. & M. S. R. R.	1,010
Do.	P., T. & B. R. R.	1,008
Do. Centre street crossing	P., T. & B. R. R.	1,110
Do. east, connects with A. V. R. R.	L. S. & M. S. R. R.	1,010
Do. connects with P., T. & B. R. R. & with Franklin Br. of the A. & G. W. R. R.	L. S. & M. S. R. R.	1,017
Oleopolis	P., T. & B. R. R.	1,032
Do.	Pitohole Valley R. R.	1,019
Olyphant	L. R. R.	810
Ore Valley, B. M.	P. B. R. R.	570
Osceola	B. & O. R. R.	768
Paintersville	S. W. Pa. R. R.	952
Palmyra	Lebanon Valley R. R.	455
Paoli	Pa. R. R.	534
Paoli Road	Chester Valley R. R.	238
Paradise	Del., L. & W. R. R.	1,521
Pardoe	S. & A. R. R.	1,205
Paris Road	P., C. & St. L. R. R.	835
Parker Junction with A. V. R. R.	P. & K. C. R. R.	888
Parker Station	A. V. R. R.	849
Parksburgh	Pa. R. R.	537
Parkton	N. C. R. R.	430
Parnassus Station	A. V. R. R.	763
Parryville	L. & S. R. R.	443
Paschall	P., W. & B. R. R.	58
Patton's	W. C. R. R.	505
Do. bench on top of parapet coping of arch culvert, W. side of road.	Bennett's Br. R. R.	1,131
Paxton	Lebanon Valley R. R.	376
Peach Bottom	C. & P. D. R. R.	99
Do.	P. B. R. R.	118
Pecopson	W. & R. R. R.	180
Pencoyd	Phil. & R. R. R.	61
Pennsylvania House	P., T. & B. R. R.	1,153
Pendlyn	N. Pa. R. R.	239
Pennfield	Bennett's Br. R. R.	1,289
Penn Haven	L. & S. R. R.	724
Do. junction	Lehigh Valley R. R.	705
Do. Do.	L. & S. R. R.	708
Penningtonville	Pa. R. R.	500
Penn Junction	E. Pa. R. R.	257
Pennock's Summit	Pa. & Del. R.	463
Penn Station	P. & B. C. R. R.	506
Do.	Pa. R. R.	974
Pennsville	S. W. Pa. R. R.	1,054
Penn Valley	Phil. & T. R. R.	21
Pequea Station	L. & Q. R. R.	300
Perkiomen Junction	Phil. & R. R. R.	109
Perryville	Pa. R. R.	441

Station.	Authority.	Elevation.
		<i>Feet.</i>
Petersburgh.....	Pa. R. R.....	678
Peter's Mills.....	L. & L. R. R.....	255
Petroleum Centre.....	P., T. & B. R. R.....	1,089
Petrolia.....	P. & K. C. R. R.....	1,175
Philadelphia depot, 31st and Chestnut sts..	W., C. & P. R. R.....	14
Do..... Market street.....	Pa. R. R.....	32
Do..... West Philadelphia.....	Pa. R. R.....	34
Do..... Fairmount bridge.....	Pa. R. R.....	51
Do..... Richmond street bridge.....	Phil. & R. R. R.....	28
Do..... Depot, cor. 9th and Green sts..	Phil. & R. R. R.....	47
Do..... Do..... at Willow street.....	N. Pa. R. R.....	28
Do..... Kensington, Frankford road crossing.....	Phil. & T. R. R.....	32
Do..... Frankford Station, middle of Church street.....	Phil. & T. R. R.....	32
Do..... Bridesburg, middle of Bridge street.....	Phil. & T. R. R.....	32
Do..... Tacony.....	Phil. & T. R. R.....	34
Do..... Southwark.....	P., W. & B. R. R.....	7
Do..... 3d street.....	P., W. & B. R. R.....	27
Do..... 6th street.....	P., W. & B. R. R.....	33
Do..... 7th street.....	P., W. & B. R. R.....	34
Do..... 10th street.....	P., W. & B. R. R.....	32
Do..... 12th street.....	P., W. & B. R. R.....	27
Do..... 18th street.....	P., W. & B. R. R.....	36
Do..... Signal Station.....	U. S. Signal Office.....	52
Philipsburgh.....	T. & C. R. R.....	1,425
Do.....	A. V. R. R.....	855
Philson's.....	B. & O. R. R.....	1,820
Phoenixville.....	Phil. & R. R. R.....	110
Picture Rock.....	M. C. F. R.....	668
Pikeland.....	Pickering Valley R. R.....	272
Pine.....	P. & E. R. R.....	565
Pine Creek.....	A. V. R. R.....	812
Pinegrove.....	B. & O. R. R.....	1,874
Pine Grove.....	L., C. & S. C. R. R.....	1,236
Do.....	S. & A. R. R.....	1,250
Do.....	N. Y., L. E. & W. R. R.....	668
Do..... Junction.....	S. & S. R. R.....	520
Pine Hill.....	B. V. R. R.....	2,064
Pinkerton.....	B. & O. R. R.....	1,649
Pioneer.....	P., T. & B. R. R.....	1,099
Piper's Run.....	H. & B. T. R. R.....	947
Pithole City.....	Pithole Valley R. R.....	1,309
Pittsburgh.. Union Depot.....	P., Ft. W. & C. R. R.....	745
Do..... on window-sill of Monongahela Incline Plane, Check House..	City levels.....	1,106
Do..... on Belt course of Union Depot, main entrance.....	City levels.....	746
Do..... on East end door-sill of Point Breeze Hotel, at intersection of Penn. and Fifth avenues..	City levels.....	973
Do..... on Belt course of Munshall's dis- tillery, corner Penn. ave. and Water street.....	City levels.....	727
Do..... on door-sill of post-office.....	City levels.....	751
Pittsburgh, on embankment of Lower (old) Reservoir, on Bedford ave.....	City levels.....	865
Do..... on embankment of Upper (old) Reservoir, Bedford ave.....	City levels.....	1,101
Do... on flow-line of Highland ave. (new) Reservoir.....	City levels.....	1,064
Do..... on flow-line of Herron Hill (new) Reservoir.....	City Levels.....	1,259

Station.	Authority.	Elevation.
		<i>Feet.</i>
Pittsburgh on flow-line of Brilliant Hill (new) Reservoir.....	City levels	934
Do.... B. M. on outer corner of coping, near Twenty-sixth street	A. V. R. R.	745
Do.... Liberty avenue crossing	A. V. R. R.	743
Do.... B. M. on south wall, upper outside corner, culvert	A. V. R. R.	728
Do.... junction with P. C. & St. L. R. R.	P., V. & C. R. R.	776
Do.... opposite Forty-third st. station	P., V. & C. R. R.	732
Do.... crossing of Fifthth street	P., V. & C. R. R.	739
Do.... low water, city datum	Levels	699
Do.... high water, 1852	Levels	730
Do.... high water, 1832	Levels	733
Do.... east side of Irwin street	Penn. R. R.	737
Do.... east side of Duquesne street	Penn. R. R.	732
Do.... B. M. at foot of lamp-post, south side of Liberty street, intersection with Water street	Penn. R. R.	721
Do.... B. M. on south side of base ring off fire-plug, north side of Penn. st. intersec. with Water st	Penn. R. R.	726
Do.... Signal Station	U. S. Signal Office	702
Pittsfield	D., A. V. & P. R. R.	1,245
Pittston	Del., L. & W. R. R.	572
Do.... west end bridge, crossing Susquehanna		571
Plainsville	Lehigh Valley R. R.	546
Pleasant Grove	H. & B. T. R. R.	748
Pleasantville	Pithole Valley R. R.	1,634
Plymouth	Del., L. & W. R. R.	535
Do.... Junction	Del., L. & W. R. R.	543
Point Lookout	B. G. R. R.	1,915
Polk	L. S. & M. S. R. R.	1,084
Pomeroy, E. intersec. of P. & D. R. R.	Pa. R. R.	483
Do.... W. intersec. of P. & D. R. R.	Pa. R. R.	4-9
Pond Eddy	N. Y., L. E. & W. R. R.	570
Portage	Pa. R. R.	1,675
Port Allegheny	B., N. Y., & P. R. R.	1,482
Port Carbon	S. Valley R. R.	639
Do.... ..	M. C. R. R.	634
Port Clinton	Del. & Hudson Canal	455
Do.... ..	Phil. & R. R. R.	410
Port Jervis	Del. & Hudson Canal	455
Port Kennedy	Phil. & R. R. R.	87
Portland	Del., L. & W. R. R.	291
Port Matilda, Main st	B. E. Valley R. R.	1,007
Port Perry Junction	B. & O. R. R.	765
Port Royal	B. & O. R. R.	792
Port Trevorton, R. R. track	S. & N. B. R. R.	428
Potts Colliery	N. H. & S. H. R. R.	1,094
Pottsgrove	C. & W. R. R.	489
Pott's Landing	Phil. & R. R. R.	63
Pottstown	Phil. & R. R. R.	150
Pottsville	Phil. & R. R. R.	614
Powelton	T. C. R. R.	1,798
Pulaski	E. & P. R. R.	826
Prather	Pithole Valley R. R.	1,251
Prescott	Lebanon Valley R. R.	501
President	P., T. & B. R. R.	1,048
Prinrose	P., C. & St. L. R. R.	1,021
Princeton	P. & R. R. R.	62
Prindibles	Bennett's Br. R. R.	1,360
Providence	L. R. R.	703
Quakake Station	C. & W. R. R.	1,353
Quakertown	N. C. & B. V. R. R.	817

Station.	Authority.	Elevation.
		<i>Feet.</i>
Quakertown	N. Pa. R. R.	496
Quarryville	L. & Q. R. R.	488
Queens Run	P. & E. R. R.	584
Radebanga's Station	Pa. R. R.	1,150
Radnor	Pa. R. R.	409
Rahn's	Perkiomen R. R.	138
Ralston	N. C. R. R.	860
Ransom	Lehigh Valley R. R.	579
Rariga Station	C. & W. R. R.	1,340
Rathbon	P. & E. R. R.	1,317
Rattling Run	S. & S. R. R.	692
Raymilton	L. S. & M. S. R. R.	1,138
Reading	Phil. & R. R. R.	268
Do. B. M. on coping stone easternmost R. R. bridge	U. S. C. & G. S.	264
Red Bank Junction	Bennett's Br. R. R.	851
Redington	Lehigh Valley R. R.	211
Red Lion	C. & F. R. R.	793
Do	P. B. R. R.	900
Reed's Road	E., B. & W. R. R.	309
Reedsville	M. & C. Co. R. R.	593
Reese Station	Pa. R. R.	903
Reeseville	Pa. R. R.	495
Reimerton	A. V. R. R.	837
Reinhold's	R. & C. R. R.	449
Reiter	L. & L. R. R.	299
Remington	P., Ft. W. & C. R. R.	710
Reno	A. & G. W. R. R.	1,011
Do	L. S. & M. S. R. R.	1,018
Renovo	P. & E. R. R.	672
Reynolds	L. Schuyl. R. R.	663
Reynoldsville, at crossing of Brookville pike	Bennett's Br. R. R.	1,377
Rheems	Pa. R. R.	439
Riceville	U. & T. R. R.	1,369
Richfield	S. & N. R. R.	765
Richland	Lebanon Valley R. R.	491
Riddleburgh	H. & B. T. R. R.	865
Ridgeway	P. & E. R. R.	1,393
Do	N. Y., R. & P. R. R.	1,376
Ridley Park	P., W. & B. R. R.	73
Rine's Store	S. & N. R. R.	412
Ringgold	L. Schuyl. R. R.	558
Ringtown	C. & W. R. R.	1,130
Ritchie	P. & E. R. R.	632
Rittenhouse Gap	C. & F. R. R.	940
Riverton	B. & O. R. R.	765
Roaring Run	T. & C. R. R.	1,427
Do	W. Pa. R. R.	830
Roaring Spring Junction	Pa. R. R.	1,196
Robbin's	B. & O. R. R.	768
Roberts'	S. & M. P. R. R.	2,042
Robertsdale	E. Broadtop R. R.	1,785
Robesonia	Lebanon Valley R. R.	441
Rocheater	Cleve. & P. R. R.	711
Do... junction with C. & P. R. R.	P., Ft. W. & C. R. R.	706
Rock Glen	D., H. & W. R. R.	921
Rockhill	E. Broadtop R. R.	624
Rockland Station	A. V. R. R.	926
Rockport	Lehigh Valley R. R.	906
Do	L. & S. R. R.	882
Rockville	S. & S. R. R.	349
Rockwood	P., T. & B. R. R.	1,016
Roherstown	Pa. R. R.	352

Station.	Authority.	Elevation.
		<i>Feet.</i>
Romain	S. R. R.	1,974
Roots	B. G. R. R.	1,222
Rosedale	P. & B. C. R. R.	312
Rosemont	Pa. R. R.	395
Ross	W. Pa. R. R.	745
Roston Station	A. V. R. R.	788
Rough and Ready	H. & B. T. R. R.	899
Roulette	J. S., P. C., & B. R. R.	1,537
Round Island	P. & E. R. R.	755
Rouns Station	Pa. R. R.	882
Rouseville	P., T. & B. R. R.	1,039
Rowlands	N. Y., L. E. & W. R. R.	704
Royer's Ford	Phil. & R. R. R.	127
Roy Stone	P. & E. R. R.	1,415
Run	L. S. & M. S. R. R.	996
Runmerfield	Lehigh Valley R. R.	696
Rupert	C. & W. R. R.	495
Do	Del., L. & W. R. R.	482
Russelburg	D., A. V. & P. R. R.	1,233
Rutherford's	Lebanon Valley R. R.	429
Rynd Farm	P., T. & B. R. R.	1,043
Saegerstown	A. & G. W. R. R.	1,116
Safe Harbor	C. & P. D. R. R.	198
St. Clair	M. C. R. R.	752
Do	Pa. R. R.	1,092
St. George Station	A. V. R. R.	935
St. Mary's	P. & E. R. R.	1,667
Salem	L. S. & M. S. R. R.	998
Salina	W. Pa. R. R.	955
Salisbury	S. R. R.	2,032
Saltillo	E. Broadtop R. R.	781
Saltsburgh	B. & O. R. R.	765
Salt Works	B. & O. R. R.	766
Saltzburgh, Market street	W. Pa. R. R.	891
Salunga	Pa. R. R.	403
Sanders	E. & C. R. R.	2,019
Sandpatch Tunnel, west portal	B. & O. R. R.	2,283
Do	B. & O. R. R.	2,235
Sand Works	B. & O. R. R.	921
Sandy Creek Station	A. V. R. R.	746
Sandy Lake	L. S. & M. S. R. R.	1,165
Sandy Lick Station	W. Pa. R. R.	887
Sandy Ridge	T. & C. R. R.	1,912
Sandy Run Junction	L. & S. R. R.	1,025
Sang Hollow	Pa. R. R.	1,143
Sanner's	S. & M. P. R. R.	1,839
Sarah Furnace Station	A. V. R. R.	861
Sartwell	B., N. Y. & P. R. R.	1,452
Sarver's Station	W. Pa. R. R.	1,027
Saxonburg Station	W. Pa. R. R.	1,501
Saxton (new depot)	H. & B. T. R. R.	849
Sayre	Lehigh Valley R. R.	774
Seahonda	P. & E. R. R.	1,722
School Lane	Phila. & R. R. R.	168
Schur's	Phila. & R. R. R.	71
Schuylkill Bridge	Lebanon Valley R. R.	274
Schuylkill Haven	Phila. & R. R. R.	526
Schwenkville	Perkiomen R. R.	152
Scotch Valley	D., H. & W. R. R.	1,017
Scottdale	S. W. Pa. R. R.	1,042
Scottsville	E. Broadtop R. R.	717
Seranton, Union Depot	Del., L. & W. R. R.	739
Do...Hyde Park	City Engineer	746
Do...Cliff street	City Engineer	695
Do...Green Ridge	City Engineer	716

Station.	Authority.	Elevation.
		<i>Feet.</i>
Scranton, Prov. street	City Engineer	771
Scrubgrass Station	A. V. R. R.	945
Seager's	C. & W. R. R.	512
Sedgwick	B. & O. R. R.	868
Seeds	W. & R. R. R.	195
Seityland	N. C. R. R.	611
Selinsgrove, frog at junct'n with N. C. R. R.	Sunbury & Lewistown R. R.	438
Do crossing Susquehanna River ..	Sunbury & Lewistown R. R.	439
Do west end of R. R. bridge	Sunbury & Lewistown R. R.	439
Do Station	Sunbury & Lewistown R. R.	440
Do S. line station-house	N. C. R. R.	438
Do junction	N. C. R. R.	438
Do center of Pine street	S. & N. B. R. R.	441
Sellers	R. & C. R. R.	382
Sellersville	N. Pa. R. R.	331
Sewickley	P., Ft. W. & C. R. R.	736
Do Station	Yough. R. R.	780
Do Y. Branch of Pennsylvania R. R.	B. & O. R. R.	779
Seymour	N. C. & B. V. R. R.	797
Shadyside Station	Pa. R. R.	856
Shaeffer's	Bennett Branch R. R.	1,425
Shaffer	P., T. & B. R. R.	1,133
Shafton Station	Pa. R. R.	905
Shainlines	Chester Valley R. R.	136
Shamokin	N. C. R. R.	738
Shamrock	E. Pa. R. R.	433
Shanghai Station	Pa. R. R.	1,173
Sharon	A. & G. W. R. R.	859
Sharon Hill	P., W. & B. R. R.	65
Sharpsburgh, Main street	W. Pa. R. R.	739
Sharpsburgh Station	A. V. R. R.	745
Sharpsville	E. & P. R. R.	948
Shawmont	Phil. & R. R. R.	69
Shawmnt	P. & E. R. R.	1,427
Shaw's Landing	A. & G. W. R. R.	1,092
Shaw's Run	T. & C. R. R.	1,112
Sheffield	P. & E. R. R.	1,337
Shelmires	E. B. & W. R. R.	246
Shenandoah, City Depot	M. & S. R. R.	1,252
Shenango	E. & P. R. R.	941
Do Grade crossing S. & A. R. R.	A. & G. W. R. R.	936
Shenk's Ferry	C. & P. D. R. R.	183
Sheridan	Lebanon Valley R. R.	459
Do	P., C. & St. L. R. R.	846
Shickshing	Del., L. & W. R. R.	521
Shimer's	L. & L. R. R.	289
Shimmels	T. & C. R. R.	1,641
Ship Bridge	Pa. R. R.	411
Shippen	B., N. Y. & P. R. R.	1,206
Shippensburg	Cumberland Valley R. R.	654
Shippensburg, B. M. on water table, N. W. corner Main & Railroad sts	U. S. C. & G. S.	653
Shirleysburgh	E. Broadtop R. R.	572
Shock's Mill	Pa. R. R.	269
Shoemakersville	Phil. & R. R. R.	314
Shohola	N. Y., L. E. & W. R. R.	648
Shoo-Fly Tunnel	B. & O. R. R.	1,621
Shugart's	L. C. & S. C. R. R.	1,131
Shuman's Bridge, bench-mark on W. end ..	Pa. R. R.	699
Shuman's Tunnel	C. & W. R. R.	803
Sinking Springs	R. & C. R. R.	348
Sinnemahoning	P. & E. R. R.	794
Skippack	Perkiomen R. R.	145
Slab Run	Bennett's Br. R. R.	1,405

Station.	Authority.	Elevation.
		<i>Feet.</i>
Slatington	Lehigh Valley R. R.	366
Sligo	A. V. R. R.	1,115
Do	W. Pa. R. R.	775
Small's Mills	P. B. R. R.	434
Smethport	McK. B. R. R.	1,433
Smithborough	S. C. R. R.	794
Smith's	Lebanon Valley R. R.	472
Smith's Ferry	Cleve. & P. R. R.	698
Smithton	B. & O. R. R.	792
Smyser's	N. C. R. R.	369
Snow Shoe	B. & S. S. R. R.	1,572
Snyder's	B. & O. R. R.	788
Snydertown	N. C. R. R.	497
Soda Works Station	A. V. R. R.	761
Soho	B. & O. R. R.	769
Somerset	S. & M. P. R. R.	2,128
Somer's Lane	Tioga R. R.	1,018
Somertown Station	N. Pa. R. R.	156
Somestown	M. C. R. R.	946
Southampton	B. & O. R. R.	1,567
Southamptonville	Phil. & N. R. R.	240
South Fork	Pa. R. R.	1,485
South Mountain Railroad Junction	Cumberland Valley R. R.	458
South Oil City Station	A. V. R. R.	1,009
South Pennsylvania Junction	Cumberland Valley R. R.	632
South Wilkesbarre	Lehigh Valley R. R.	546
Spartansburgh	P., T. & B. R. R.	1,457
Spindler's	Pa. R. R.	404
Spragueville	Del., L. & W. R. R.	490
Spring	E. & P. R. R.	961
Spring Creek	P. & E. R. R.	1,295
Springdale	W. Pa. R. R.	749
Springfield	Phil. & R. R. R.	69
Do	L. S. & M. S. R. R.	664
Do	W. & R. R. R.	645
Do	Pa. R. R.	876
Spring Forge	Pa. R. R.	455
Spring Garden, bench-mark	P. B. R. R.	432
Springhill	W. C. & P. R. R.	128
Do	Pa. R. R.	749
Spring Mill	Phil. & R. R. R.	53
Spring Run Village	Levels	877
Springton	E. B. & W. R. R.	405
Springvale	P. B. R. R.	734
Springville	M. R. R.	1,257
Do	Pa. R. R.	390
Spruce Creek	Pa. R. R.	777
Standing Stone	Lehigh Valley R. R.	702
Stanhope	S. & S. R. R.	555
Star	D., A. V. & P. R. R.	1,376
Starveca	N. Y., L. E. & W. R. R.	1,470
State Line	B., N. Y. & P. R. R.	1,443
Stauffer's	P. & C. R. R.	1,057
Steiner's Mill	T. & C. R. R.	1,428
Sterling	P. & E. R. R.	916
Stauben	L. & L. R. R.	333
Steven's Point	N. Y., L. E. & W. R. R.	1,120
Stewart	P., T. & B. R. R.	1,047
Stewart's Station	Pa. R. R.	791
Stewart's Switch	P., T. & B. R. R.	1,473
Stillwater	N. Y., L. E. & W. R. R.	1,560
Stoneboro'	L. S. & M. S. R. R.	1,171
Stoneboro's, junction with F division of L. S. & M. S. R. R.	N. C. & F. R. R.	1,171

Station.	Authority.	Elevation.
		<i>Feet.</i>
Stoneham	P. & E. R. R.	1,347
Stone House	P. & K. C. R. R.	1,089
Street Road	W. C. & P. R. R.	252
Stroudsburg	Del., L. & W. R. R.	403
Sugar Creek	A. & G. W. R. R.	1,014
Sugar Grove	A. & G. W. R. R.	1,040
Sugar Notch	Lehigh Valley R. R.	666
Do	L. & S. R. R.	660
Sullivan	P., Ft. W. & C. R. R.	765
Summerhill	Pa. R. R.	1,557
Sunbury	N. C. R. R.	444
Do.. junction with Shamokin Branch N. C. R. R.	N. C. R. R.	441
Do.. north line of depot building	N. C. R. R.	444
Do.. junction with D. W. & H. R. R.	N. C. R. R.	451
Do.. Junction	D., H. & W. R. R.	443
Do.. junction of Shamokin Branch of N. C. R. R.	P. & E. R. R.	444
Susquehanna	N. Y., L. E. & W. R. R.	914
Do	P. & E. R. R.	534
Do	Pa. R. R.	342
Susquehanna Bridge	Pa. R. R.	350
Susquehanna Junction	N. Y., L. E. & W. R. R.	982
Swansville	E. & P. R. R.	735
Swarthmore	W. C. & P. R. R.	125
Swatara Gap	L. & T. R. R.	447
Swede Furnace	Phil. & R. R. R.	66
Swiss Vale Station	Pa. R. R.	922
Tamaqua	C. & W. R. R.	804
Do	T. B. R. R.	787
Tameness	N. Valley R. R.	1,287
Tarentum	W. Pa. R. R.	757
Do	A. V. R. R.	778
Tarr Farm	P., T. & B. R. R.	1,062
Tatesville	H. & B. T. R. R.	1,096
Taylorville	B. & O. R. R.	1,008
Taylorville	Del., L. & W. R. R.	683
Teeple Town	P. & P. R. R.	1,204
Temperanceville	P., C. & St. L. R. R.	767
Temple	E. Pa. R. R.	387
Templeton Station	A. V. R. R.	824
Thompson	N. Y., L. E. & W. R. R.	1,703
Do	P., V. & C. R. R.	765
Thompson's	N. C. B. V. R. R.	860
Do	P., T. & B. R. R.	1,143
Thompson's Mills	B. & O. R. R.	1,108
Thompsontown	Pa. R. R.	419
Thorndale	Pa. R. R.	313
ThurLOW	P., W. & B. R. R.	34
Tidioute	P., T. & B. R. R.	1,112
Timonium	N. C. R. R.	395
Tioga	Phila. & R. R. R.	129
Do	S. C. R. R.	896
Do	Tioga R. R.	1,042
Tioga Junction	T. & E. & S. L. R. R.	1,021
Tioga Village	C., C. & A. R. R.	1,052
Tiona	P. & E. R. R.	1,359
Tionesta	P., T. & B. R. R.	1,060
Tipton	Pa. R. R.	990
Titusville	P., T. & B. R. R.	1,194
Do	Pithole Valley R. R.	1,181
Do.. Franklin street crossing	P., T. & B. R. R.	1,194
Do.. Washington street crossing	P., T. & B. R. R.	1,194
Do.. Monroe street crossing	P., T. & B. R. R.	1,195

Station.	Authority.	Elevation.
		<i>Feet.</i>
Tivola	M. C. R. R.	708
Tobyhanna	Del., L. & W. R. R.	1,932
Tomhicken	D., H. & W. R. R.	1,228
Ton Road	W. C. R. R.	577
Topton Junction	E. Pa. R. R.	485
Torren's Station	Pa. R. R.	920
Toughkenamon	P. & B. C. R. R.	283
Towanda	Lehigh Valley R. R.	738
Do...switch at upper depot	B. R. R.	738
Do...Barclay depot	B. R. R.	725
Transfer	A. & G. W. R. R.	993
Treichler's	L. & S. R. R.	344
Tremont	L. & T. R. R.	766
Trevorton Junction	N. C. R. R.	428
Trexlerstown	C. & F. R. R.	411
Trowbridge	T. & E. & S. L. R. R.	1,440
Troy	Bennett's Br. R. R.	1,186
Do.....	N. C. R. R.	1,148
Trunkerville	P., T. & B. R. R.	1,098
Tryonville	P., T. & B. R. R.	1,318
Tryonville Junction	U. & T. R. R.	1,320
Tuckerton	Phila. & R. R. R.	298
Tullytown	Phila. & T. R. R.	20
Tunkhannock	Lehigh Valley R. R.	611
Tunkhannock, Junction with L. V. R. R.	M. R. R.	611
Turner	L. S. & M. S. R. R.	1,060
Turner's	N. C. & F. R. R.	1,137
Turtle Creek Station	Pa. R. R.	750
Tuscarora	Schnylkill Valley R. R.	909
Do.....	Pa. R. R.	429
Do...B. M. on top of stone foundation W. corner of water station	Pa. R. R.	424
Tuscarora Mountain	Levels	1,926
Tussey's Mountain	Levels	1,934
Tyler's Station	Bennett's Br. R. R.	1,232
Tylersville	M. R. R.	1,400
Tyrone	L., C. & S. C. R. R.	907
Tyrone Water Station	Pa. R. R.	896
Ulster	Lehigh Valley R. R.	743
Union	P. & E. R. R.	1,270
Do.....	R. & C. R. R.	399
Union City	A. & G. W. R. R.	1,301
Do...P. & E. Junction	U. & T. R. R.	1,270
Uniondale	N. Y., L. E. & W. R. R.	1,670
Union Forge	L. & T. R. R.	432
Union Furnace	Pa. R. R.	799
Uniontown	Cumberland T'p'k	952
Do.....	P. & C. R. R.	981
Do.....	S. W. Pa. Extension	990
Unionville	P. & E. Valley R. R.	782
Upper Catasauqua	L. & S. R. R.	284
Upper Lehigh	L. & S. R. R.	1,802
Upton	Pa. R. R.	430
Ursina	U. & N. F. R. R.	1,342
Ursina Junction, U. & N. F. R. R. June	B. & O. R. R.	1,406
Utica	A. & G. W. R. R.	1,035
Valley Coal Mines	P. & C. R. R.	1,035
Valley Forge	Phil. & R. R. R.	98
Valley Store	Chester Valley R. R.	295
Valley Works	S. W. Pa. R. R.	1,075
Van Emman's	Chartiers R. R.	922
Vauscoyoc	B. G. R. R.	1,995
Do.....	T. & C. R. R.	1,427
Venango	A. & G. W. R. R.	1,163
Verona Station	A. V. R. R.	746

Station.	Authority.	Elevation.
		<i>Feet.</i>
Vicksburgh.....	L., C. & S. C. R. R.....	529
Villa Nova.....	Pa. R. R.....	430
Vineyard.....	Pa. R. R.....	548
Volanté.....	N. C. & F. R. R.....	1,025
Vosburgh.....	Lehigh Valley R. R.....	615
Walbert.....	C. & F. R. R.....	550
Walker's Mill.....	P., C. & St. L. R. R.....	833
Walkertown.....	Pa. R. R.....	388
Wallace Run.....	P., Ft. W. & C. R. R.....	895
Wallacetown.....	T. & C. R. R.....	1,727
Wallingford.....	W. C. & P. R. R.....	168
Wall's Station.....	Pa. R. R.....	751
Walnut Bend.....	P., T. & B. R. R.....	1,023
Walnut Port.....	L. & S. R. R.....	371
Wampum.....	N. C. & B. V. R. R.....	801
Wanamie.....	L. & S. R. R.....	644
Warren.....	D., A. V. & P. R. R.....	1,200
Do.....	P. & E. R. R.....	1,186
Warrior Rdge.....	Pa. R. R.....	677
Warrior Run.....	Lehigh Valley R. R.....	716
Washington.....	C. & P. D. R. R.....	232
Do.....	Chartiers R. R.....	1,031
Do.....	B. & O. R. R.....	1,049
Do.....	Cumberland T'p'k.....	1,406
Waterford.....	Levels.....	630
Do.....	P. & E. R. R.....	1,193
Watersville (surf. of Little Pine Cr.).....	J. S., P. C. & B. R. R.....	614
Watsonstown.....	P. & E. R. R.....	481
Watt's.....	P. & C. R. R.....	991
Waverly.....	Lehigh Valley R. R.....	830
Waverly Junction.....	Lehigh Valley R. R.....	824
Wayne.....	Pa. R. R.....	405
Do.....	Phil. & R. R. R.....	156
Do.....	P. & E. R. R.....	572
Waynesburgh Station.....	E., B. & W. R. R.....	723
Webster's Mill.....	N. Y., L. E. & W. R. R.....	1,290
Weissport.....	L. & S. R. R.....	475
Wells.....	T. & E. & S. L. R. R.....	995
Wellsborough.....	C., C. & A. R. R.....	1,319
Wentzel's Station.....	S. & N. B. R. R.....	418
Wernersville.....	Lebanon Valley R. R.....	388
Wernway.....	McK. & B. R. R.....	1,461
Wesleyville.....	L. S. & M. S. R. R.....	697
West Alexandria.....	B. & O. R. R.....	1,043
Do.....	Cumberland Turnpike.....	1,797
West Brownsville, in street in front of hotel.....	P. V. & C. R. R.....	774
West Chester.....	W. C. & P. R. R.....	406
Do..... Gay street.....	W. C. R. R.....	420
Do..... Market street.....	W. C. R. R.....	414
Do..... junction with W.C. & P. R. R.....	P. & B. C. R. R.....	133
West Conshohocken.....	Phil. & R. R. R.....	61
West Falls.....	Phil. & R. R. R.....	61
West Grove.....	P. & B. C. R. R.....	444
West Manayunk.....	Phil. & R. R. R.....	61
West Newton.....	B. & O. R. R.....	782
West Overton.....	P. & C. R. R.....	1,045
West Pittston.....	Del., L. & W. R. R.....	579
Westport.....	P. & E. R. R.....	691
West Spring Mill.....	Phil. & R. R. R.....	61
West Willow Station.....	L. & Q. R. R.....	449
Westwood Junction.....	M., H. & S. H. R. R.....	671
Wetmore.....	P. & E. R. R.....	1,804
Wheatland.....	E. & P. R. R.....	841

Station.	Authority.	Elevation.
		<i>Feet.</i>
Spartanburgh, S. U. & C. D. R. R.	C. & G. R. R.	693
Do. St. John's College.	U. S. C. & G. S.	875
Strothers.	C. & G. R. R.	292
Summerville.	S. Carolina R. R.	68
Table Rock.	U. S. C. & G. S.	3, 124
Thicketty.	U. S. C. & G. S.	1, 271
Tucoa.	U. S. C. & G. S.	1, 778
Trenton.	C., C. & A. R. R.	620
Union.	C. & G. R. R.	579
Vancluse.	C., C. & A. R. R.	299
Varnesville.	P. R. R. R.	101
Union.	C. & G. R. R.	579
Walhalla.	U. S. C. & G. S.	985
Do. Church.	U. S. C. & G. S.	1, 118
Wards.	C., C. & A. R. R.	673
Warrens.	C., C. & A. R. R.	545
Westminster.	A. & R. A. L. R. R.	919
Whitakers.	A. & R. A. L. R. R.	907
White Oak.	C., C. & A. R. R.	548
Williamston.	C. & G. R. R.	840
Willow Oak.	U. S. C. & G. S.	135
Winnsborough.	C., C. & A. R. R.	543
Wofford.	U. S. C. & G. S.	878
Woodwards.	U. S. C. & G. S.	582
Yemassee.	S. Carolina R. R.	25
Do.	U. S. C. & G. S.	23
Do. crossing of S. & C. R. R.	P. R. R. R.	25

RHODE ISLAND.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Albion	Prov. & Worces. R. R	88
Allendale	Prov. & Spring. R. R	104
Alienville	Prov. & Spring. R. R	134
Apponaug	N. Y., Prov. & Bost. R. R	25
Ashton	Prov. & Worces. R. R	76
Auburn	N. Y., Prov. & Boston R. R	43
Barrington	Prov., Warren & Bristol R. R	22
Berkley	Prov. & Worces. R. R	69
Bristol	Prov., Warren & Bristol R. R	17
Carolina	N. Y., Prov. & Bost. R. R	69
Cedar Grove	Prov., Warren & Bristol R. R	36
Central Falls	Prov. & Worces. R. R	70
Centredale	P. & S. R. R	104
Cowesett	N. Y., Prov. & Bost. R. R	29
Davisville	N. Y., Prov. & Bost. R. R	55
Drownville	Prov., Warren & Brist. R. R	30
Dyerville	Prov. & Spring. R. R	74
East Providence	Prov., Warren & Brist. R. R	20
Georgiaville	Prov. & Spring. R. R	164
Graystone	Prov. & Spring. R. R	114
Greenwich	N. Y., Prov. & Bost. R. R	32
Hamlet	Prov. & Worces. R. R	146
Harrisville	Prov. & Spring. R. R	326
Hills Grove	N. Y., Prov. & Bost. R. R	55
Kingston Junction	N. Y., Prov. & Bost. R. R	111
Lonsdale	Prov. & Worces. R. R	66
Manton	Prov. & Spring. R. R	74
Manville	Prov. & Worces. R. R	105
Nayatt	Prov., Warren & Bristol R. R	24
Newport, Signal Station	U. S. Signal Office	44
New Shoreham, Signal Station	U. S. Signal Office	27
Niantic	N. Y., Prov. & Bost. R. R	44
Norwood	N. Y., Prov. & Bost. R. R	58
Oakland	Prov. & Spring. R. R	308
Olneyville	Prov. & Spring. R. R	49
Pascoag	Prov. & Spring. R. R	396
Pawtucket	Bost. & Prov. R. R	79
Do	Prov. & Worces. R. R	73
Providence	Bost. & Prov. R. R	10
Do	N. Y., Prov. & Bost. R. R	12
Richmond	N. Y., Prov. & Bost. R. R	87
River Point	H., P. & F. R. R	93
Slocumville	N. Y., P. & B. R. R	136
Smithfield	Prov. & Spring. R. R	262
Tar Kiln	Prov. & Spring. R. R	364
Valley Falls	Prov. & Worces. R. R	68
Warren	Prov., Warren & Bristol R. R	24
Westerly	N. Y., P. & B. R. R	33
Wickford Junction	N. Y., P. & B. R. R	89
Woodlawn	Prov. & Worces. R. R	56
Wood River Junction	N. Y., Prov. & Bost. R. R	56
Woonsocket	Prov. & Worces. R. R	159

SOUTH CAROLINA.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Abbeville	C. & G. R. R.	535
Adgers	C., C. & A. R. R.	540
Aiken	S. Carolina R. R.	520
Allendale	P. R. R. R.	192
Alston	C. & G. R. R.	259
Anderson	C. & G. R. R.	764
Appleton	P. R. R. R.	262
Augusta Bridge	S. Carolina R. R.	185
Barr's	C., C. & A. R. R.	458
Batesburg	C., C. & A. R. R.	657
Beaufort Wharf	U. S. C. & G. S.	7
Beaufort	P. R. R. R.	20
Beldoc	P. R. R. R.	116
Belton	C. & G. R. R.	896
Birds Crossing	C. & G. R. R.	760
Blacks	A. & R. A. L. R. R.	772
Blackstock	C., C. & A. R. R.	621
Blackville	S. Carolina R. R.	301
Blair's	C. & G. R. R.	293
Blythwood	C., C. & A. R. R.	505
Bookman's	C. & G. R. R.	204
Branchville	S. Carolina R. R. R.	140
Brunson's	P. R. R. R.	139
Cæsar's Head, hotel	U. S. C. & G. S.	3, 118
Carson's Hills	S. Carolina R. R.	370
Chappell's	C. & G. R. R.	402
Charleston	S. Carolina R. R.	16
Do	S. & C. R. R.	9
Do... Signal Station	U. S. Signal Office	52
Chester	C., C. & A. R. R.	543
Clinton	C. & G. R. R.	687
Columbia	C. & G. R. R.	227
Do... Blading street Station	C., C. & A. R. R.	296
Do... S. C. R. R. Station	C., C. & A. R. R.	223
Do... Old Junction	C., C. & A. R. R.	195
Cornwalls	C., C. & A. R. R.	638
Dankins	C. & G. R. R.	286
Dead Fall	C., C. & A. R. R.	156
Donalds	C. & G. R. R.	760
Dyson's	C. & G. R. R.	420
Early Branch	P. R. R. R.	79
Early Depot	U. S. C. & G. S.	1, 131
Ellenton	P. R. R. R.	149
Enone	A. & R. A. L. R. R.	987
Fish Dam	C. & G. R. R.	498
Fort Mill	C., C. & A. R. R.	336
Frosts Mill	C. & G. R. R.	179
Furman University	U. S. C. & G. S.	1, 074
Garcy's Lane	C. & G. R. R.	580
Glassy	U. S. C. & G. S.	1, 699
Glassy Rock	U. S. C. & G. S.	3, 076
Glendale's	C. & G. R. R.	708
Golden Grove	C. & G. R. R.	900
Grantsville	C., C. & A. R. R.	243
Greenville	A. & R. A. L. R. R.	976
Do	C. & G. R. R.	989
Do... Episcopal Church	U. S. C. & G. S.	1, 105
Do... Baptist Church	U. S. C. & G. S.	966

Station.	Authority.	Elevation.
		<i>Feet.</i>
Greenwood.....	C. & G. R. R.....	671
Gum Tree.....	U. S. C. & G. S.....	17
Helena.....	C. & G. R. R.....	532
Hodges.....	C. & G. R. R.....	714
Hogback.....	U. S. C. & G. S.....	3,230
Honey Path.....	C. & G. R. R.....	810
Hopes.....	C. & G. R. R.....	297
Jacksonboro Depot.....	S. & C. R. R.....	17
Jalapa.....	C. & G. R. R.....	576
Johnston.....	C., C. & A. R. R.....	670
Jonesville.....	C. & G. R. R.....	583
Keisklers.....	C., C. & A. R. R.....	546
Killians.....	C., C. & A. R. R.....	331
Kinards.....	C. & G. R. R.....	602
Langleys.....	C., C. & A. R. R.....	200
Lawrens.....	C. & G. R. R.....	589
Leesville.....	C., C. & A. R. R.....	645
Lewis.....	C., C. & A. R. R.....	574
Lexington.....	C., C. & A. R. R.....	370
Limestone.....	A. & R. A. L. R. R.....	787
Martins.....	C. & G. R. R.....	619
Mauldin.....	U. S. C. & G. S.....	1,328
Miles Mill.....	C., C. & A. R. R.....	443
Millet.....	P. R. R. R.....	135
Montgomery's.....	C. & G. R. R.....	199
Newberry.....	C. & G. R. R.....	502
New Market.....	C. & G. R. R.....	630
Ninety Six.....	C. & G. R. R.....	570
Orangeburgh.....	S. Carolina R. R.....	265
Pacolett.....	C. & G. R. R.....	718
Page's Point.....	U. S. C. & G. S.....	29
Paris.....	U. S. C. & G. S.....	2,054
Parkes, T. O.....	C. & G. R. R.....	704
Paris.....	C. & G. R. R.....	291
Pascolett.....	A. & R. A. L. R. R.....	857
Pendleton.....	A. & R. A. L. R. R.....	879
Do.....	C. & G. R. R.....	817
Pickens C. H.....	U. S. C. & G. S.....	1,162
Pickensville.....	A. & R. A. L. R. R.....	1,094
Piedmont.....	C. & G. R. R.....	794
Pinnacle.....	U. S. C. & G. S.....	3,436
Pomaria.....	C. & G. R. R.....	330
Port Royal.....	P. R. R. R.....	11
Prosperity.....	C. & G. R. R.....	551
Rich Mountain.....	U. S. C. & G. S.....	3,569
Ridge Spring.....	C., C. & A. R. R.....	647
Ridgeway.....	C., C. & A. R. R.....	626
Robertson.....	C., C. & A. R. R.....	562
Rock Hill.....	C., C. & A. R. R.....	669
Rocky Mountain.....	U. S. C. & G. S.....	1,029
Salubrity.....	A. & R. A. L. R. R.....	1,006
Saluda, old town.....	C. & G. R. R.....	386
Santuc.....	C. & G. R. R.....	512
Seneca.....	A. & R. A. L. R. R.....	954
Sharps.....	C., C. & A. R. R.....	444
Sheldon.....	P. R. R. R.....	21
Shelton.....	C. & G. R. R.....	315
Shufords.....	C. & G. R. R.....	1,000
Silver Street.....	C. & G. R. R.....	470
Simpsons.....	C., C. & A. R. R.....	604
Six-Mile Mountain.....	U. S. C. & G. S.....	1,595
Smiths.....	C., C. & A. R. R.....	545
Spartanburgh.....	A. & R. A. L. R. R.....	787
Do..... Baptist Church.....	U. S. C. & G. S.....	887

Station.	Authority.	Elevation.
		<i>Feet.</i>
Richland.....	L., N., S. & N. A. R. R.	774
Rives.....	M. & O. R. R.	301
Robbins.....	C. S. R. R.	1,382
Rock Creek.....	C. S. R. R.	753
Rockwood.....	C. S. R. R.	885
Roddy.....	C. S. R. R.	784
Rosboro'.....	D. R. V. R. R.	708
Rossville.....	Memphis & C. R. R.	316
Rutherford.....	M. & O. R. R.	321
Safford, Mount.....	Guyot.....	6,535
Sailor's Rest.....	L., N., S. & N. A. R. R.	364
Saulsbury.....	Memphis & C. R. R.	536
Saundersville.....	L., N., S. & N. A. R. R.	545
Sedgemore.....	C. S. R. R.	1,401
Shelby's.....	L., N., S. & N. A. R. R.	249
Shepard's.....	L., N., S. & N. A. R. R.	279
Silver Creek.....	D. R. V. R. R.	702
Snaky Mountain.....	Guyot.....	5,195
South Berlin.....	D. R. V. R. R.	775
South Tunnel.....	L., N., S. & N. A. R. R.	804
Spring City.....	C. S. R. R.	781
Springdale.....	L., N., S. & N. A. R. R.	256
Springville.....	L., N., S. & N. A. R. R.	340
Staunton.....	L., N., S. & N. A. R. R.	303
Steele's.....	L., N., S. & N. A. R. R.	365
Stevenson.....	L., N., S. & N. A. R. R.	709
Stewarts.....	L., N., S. & N. A. R. R.	464
Sunbright.....	C. S. R. R.	1,359
Talleys.....	D. R. V. R. R.	789
Taylor's.....	L., N., S. & N. A. R. R.	307
Tennessee Ridge.....	L., N., S. & N. A. R. R.	720
Thermometer Knob.....	Guyot.....	6,157
Thompsons.....	L., N., S. & N. A. R. R.	777
Three Brothers (highest).....	Guyot.....	5,907
Thunderhead.....	Guyot.....	5,520
Thunderknob.....	Guyot.....	5,682
Trenton.....	M. & O. R. R.	321
Trezerant.....	L., N., S. & N., A. R. R.	443
Tricorner Knob.....	Guyot.....	6,188
Turkey Knob.....	Guyot.....	4,740
Union.....	E. T., Va. & Ga. R. R.	1,457
Union City.....	M. & O. R. R.	346
Vernon Furnace.....	L., N., S. & N. A. R. R.	367
Veto.....	L., N., S. & N. A. R. R.	619
Wales.....	L., N., S. & N. A. R. R.	668
Ward.....	D. R. V. R. R.	732
Wauhatchie.....	Ala. G. S. R. R.	690
Wells.....	L., N., S. & N. A. R. R.	242
West Harpeth.....	L., N., S. & N. A. R. R.	670
Whitesburgh.....	E. T., Va. & Ga. R. R.	1,214
Withe.....	L., N., S. & N. A. R. R.	271

TENNESSEE.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Albany.....	L., N., S. & N. A. R. R.....	564
Allens.....	L., N., S. & N. A. R. R.....	353
Amnicola.....	W. & A. R. R.....	695
Annadell.....	C. S. R. R.....	1, 249
Aspen Hill.....	L., N., S. & N. A. R. R.....	648
Athens.....	E. T., Va. & Ga. R. R.....	933
Atwood.....	L., N., S. & N. A. R. R.....	428
Bailey's.....	L., N., S. & N. A. R. R.....	664
Bartlett.....	L., N., S. & N. A. R. R.....	263
Belfast.....	D. R. V. R. R.....	814
Bells.....	L., N., S. & N. A. R. R.....	320
Benton Switch.....	L., N., S. & N. A. R. R.....	374
Bethel.....	M. & O. R. R.....	463
Big Hatchie.....	L., N., S. & N. A. R. R.....	286
Big Sandy.....	L., N., S. & N. A. R. R.....	345
Big Stone Mountain.....	Guyot.....	5, 614
Bolivar.....	M. C. & T. R. R.....	430
Bond's.....	L., N. S. & N. A. R. R.....	314
Boyce.....	C. S. R. R.....	694
Branden.....	L., N., S. & N. A. R. R.....	307
Brentwood.....	L., N., S. & N. A. R. R.....	698
Bristol.....	N. & W. R. R.....	1, 689
Brown's Road.....	L., N. S. & N. A. R. R.....	476
Brownsville.....	L., N., S. & N. A. R. R.....	333
Bryant.....	D. R. V. R. R.....	671
Buck Lodge.....	L., N., S. & N. A. R. R.....	711
Buford's.....	L., N., S. & N. A. R. R.....	702
Caledonia.....	L., N., S. & N. A. R. R.....	421
Campbells.....	L., N., S. & N. A. R. R.....	686
Carbondale.....	L., N., S. & N. A. R. R.....	362
Cargrove.....	L., N., S. & N. A. R. R.....	246
Carroll.....	M. & O. R. R.....	375
Carter's Creek.....	L., N., S. & N. A. R. R.....	602
Cave Springs.....	C. S. R. R.....	697
Chattanooga.....	C. S. R. R.....	684
Do.....Signal Station.....	U. S. Signal Office.....	783
Cherry's.....	L., N., S. & N. A. R. R.....	535
Chewalla.....	Memphis & C. R. R.....	409
Chickamauga.....	W. & A. R. R.....	685
Chilhowee Mountain.....	Guyot.....	2, 452
Chimzy Knob.....	Guyot.....	5, 588
Chitwood.....	C. S. R. R.....	1, 332
Clarksville.....	L., N., S. & N. A. R. R.....	392
Cleveland.....	E. T., Va. & Ga. R. R.....	878
Clifton.....	L., N., S. & N. A. R. R.....	353
Clingman's Dome.....	Guyot.....	6, 660
Colliersville.....	Memphis & C. R. R.....	379
Collins, Mount.....	Guyot.....	6, 188
Columbia.....	L., N., S. & N. A. R. R.....	644
Corner Knob.....	Guyot.....	5, 246
Corrairie.....	C. S. R. R.....	813
Coulterville.....	C. S. R. R.....	712
Crockett.....	M. & O. R. R.....	296
Cross Knob.....	Guyot.....	5, 931
Cumberland.....	L., N., S. & N. A. R. R.....	355
Curtis, Mount.....	Guyot.....	6, 568
Dark's Mill.....	L., N., S. & N. A. R. R.....	574
Darwin.....	C. S. R. R.....	767

Station.	Authority.	Elevation.
		<i>Feet.</i>
Dayton	G. S. R. R.	715
Dodsen's	L., N., S. & N. A. R. R.	894
Duck River	L., N., S. & N. A. R. R.	578
Dudley's	L., N., S. & N. A. R. R.	494
Dyer	M. & O. R. R.	365
Eagle Top	Guyot	5,433
Edgefield Junction	L., N., S. & N. A. R. R.	414
Elk Ridge Summit	D. R. V. R. R.	789
Emory Gap	C. S. R. R.	840
Erin	L., N., S. & N. A. R. R.	404
Ewells	L., N., S. & N. A. R. R.	747
Ewings	D. R. V. R. R.	730
Fair Grounds	L., N., S. & N. A. R. R.	439
Falcon	M. & O. R. R.	433
Fayetteville	D. R. V. R. R.	656
Forney Ridge Peak	Guyot	5,087
Fountain Head	L., N., S. & N. A. R. R.	778
Franklin	L., N., S. & N. A. R. R.	617
Gadsden	L., N., S. & N. A. R. R.	406
Gallatin	L., N., S. & N. A. R. R.	494
Galloway	L., N., S. & N. A. R. R.	277
Germantown	Memphis & C. R. R.	378
Gibson	L., N., S. & N. A. R. R.	378
Givin	L., N., S. & N. A. R. R.	344
Glen Alice	C. S. R. R.	826
Glen Mary	C. S. R. R.	1,289
Grand Junction	Memphis & C. R. R.	575
Gravel Pit	L., N., S. & N. A. R. R.	360
Graysville	C. S. R. R.	737
Great Bald Mountain	Guyot	4,922
Great Frog Mountain	Guyot	4,226
Greenville	E. T., Va. & Ga. R. R.	1,581
Guyot, Mount	Guyot	6,636
Hampton's	L., N., S. & N. A. R. R.	513
Hangover	Guyot	5,600
Harris	D. R. V. R. R.	579
Harwell	L., N., S. & N. A. R. R.	617
Helenwood	C. S. R. R.	1,409
Henderson	M. & O. R. R.	427
Hendersonville	L., N., S. & N. A. R. R.	446
Henry	L., N., S. & N. A. R. R.	518
Do. Mount	Guyot	6,373
Hills	D. R. V. R. R.	600
Humboldt	L., N., S. & N. A. R. R.	329
Hurricane	L., N., S. & N. A. R. R.	630
Jackson	M. & O. R. R.	425
Johnson	E. T., Va. & Ga. R. R.	1,643
Johnsonville	N. & N. R. R.	368
Jones	L., N., S. & N. A. R. R.	314
Jonesboro	E. T., Va. & Ga. R. R.	1,734
Keeling	D. R. V. R. R.	735
Kenton	M. & O. R. R.	309
King's Point	C. S. R. R.	696
Knoxville	E. T., Va. & Ga. R. R.	900
Do. Signal Station	U. S. Signal Office	980
La Grange	Memphis & C. R. R.	531
Lausing	C. S. R. R.	1,197
Laurel Peak	Guyot	5,922
Leconte, Mount	Guyot	6,612
Lester's	L., N., S. & N. A. R. R.	723
Lewisburgh	D. R. V. R. R.	727
Lookout	C. S. R. R.	692
London	E. T., Va. & Ga. R. R.	816
Love, Mount	Guyot	6,443

Station.	Authority.	Elevation.
		<i>Feet.</i>
Luftee Knob	Guyot	6, 232
Lynnville	L., N., S. & N. A. R. R.	734
McElwee	C. S. R. R.	788
McKenzie	L., N., S. & N. A. R. R.	470
McNairy	M. & O. R. R.	454
Madison	L., N., S. & N. A. R. R.	466
Malory's	L., N., S. & N. A. R. R.	674
Mason	L., N., S. & N. A. R. R.	296
Master Knob	Guyot	6, 013
Matthews	L., N., S. & N. A. R. R.	398
Medon	M. C. & T. R. R.	420
Mellhorn	C. S. R. R.	833
Melville	C. S. R. R.	711
Memphis, city base	City engineer	117
Do	L., N., S. & N. A. R. R.	227
Do	Miss. & Tenn. R. R.	258
Do	M. & C. R. R.	244
Do .. Signal Station	U. S. Signal Office	321
Middleburgh	M. C. & T. R. R.	537
Middleton	Memphis & C. R. R.	408
Milan	L., N., S. & N. A. R. R.	408
Miller	C. S. R. R.	847
Mingus, Mount	Guyot	5, 094
Mitchellville	L., N., S. & N. A. R. R.	748
Morristown	E. T., Va. & Ga. R. R.	1, 283
Moscow	Memphis & C. R. R.	352
Nashville, city base	City engineer	232
Do	L., N., S. & N. A. R. R.	409
Do	N. & N. R. R.	430
Do	N. & D. R. R.	445
Do .. H. W. Cumberland R.	City engineer	397
Do .. L. W. Cumberland R.	City engineer	340
Do .. Signal Station	U. S. Signal Office	507
Neighbor	Guyot	5, 771
Nemo	C. S. R. R.	917
New Market	E. T., Va. & Ga. R. R.	1, 057
New River	C. S. R. R.	1, 215
North Bald Mountain	Guyot	4, 711
Oakdale Junction	C. S. R. R.	812
Oak Hill	L., N., S. & N. A. R. R.	355
Oakland, top of ridge	E., H. & N. R. R.	980
Ocoee Mountain	Guyot	6, 135
Oneida	C. S. R. R.	1, 454
Overtons	L., N., S. & N. A. R. R.	533
Owens	L., N., S. & N. A. R. R.	677
Palmyra	L., N., S. & N. A. R. R.	367
Paris	L., N., S. & N., A. R. R.	447
Parks	D. R. V. R. R.	650
Peapoint	L., N., S. & N. A. R. R.	256
Peck's Peak	Guyot	6, 232
Petersburgh	D. R. V. R. R.	727
Pilot Knob	L., N., S. & N. A. R. R.	447
Pilot Mountain	C. S. R. R.	1, 348
Pinson	M. & O. R. R.	394
Pleasant Grove	L., N., S. & N., A. R. R.	719
Pocahontas	Memphis & C. R. R.	394
Porters	L., N., S. & N. A. R. R.	352
Prospect	L., N., S. & N. A. R. R.	588
Pulaski	L., N., S. & N. A. R. R.	641
Ramer	M. & O. R. R.	416
Rathburn	C. S. R. R.	788
Raven Knob	Guyot	6, 230
Betrio	C. S. R. R.	747
Reynolds	L., N., S. & N. A. R. R.	724

Station.	Authority.	Elevation.
		<i>Feet.</i>
Richland.....	L., N., S. & N. A. R. R.....	774
Rives.....	M. & O. R. R.....	301
Robbins.....	C. S. R. R.....	1,382
Rock Creek.....	C. S. R. R.....	753
Rockwood.....	C. S. R. R.....	885
Roddy.....	C. S. R. R.....	784
Rosboro'.....	D. R. V. R. R.....	708
Rossville.....	Memphis & C. R. R.....	316
Rutherford.....	M. & O. R. R.....	321
Safford, Mount.....	Guyot.....	6,535
Sailor's Rest.....	L., N., S. & N. A. R. R.....	364
Saulsbury.....	Memphis & C. R. R.....	536
Saundersville.....	L., N., S. & N. A. R. R.....	545
Sedgemore.....	C. S. R. R.....	1,401
Shelby's.....	L., N., S. & N. A. R. R.....	249
Shepard's.....	L., N., S. & N. A. R. R.....	279
Silver Creek.....	D. R. V. R. R.....	702
Snaky Mountain.....	Guyot.....	5,195
South Berlin.....	D. R. V. R. R.....	775
South Tunnel.....	L., N., S. & N. A. R. R.....	804
Spring City.....	C. S. R. R.....	781
Springdale.....	L., N., S. & N. A. R. R.....	256
Springville.....	L., N., S. & N. A. R. R.....	340
Staunton.....	L., N., S. & N. A. R. R.....	303
Steele's.....	L., N., S. & N. A. R. R.....	365
Stevenson.....	L., N., S. & N. A. R. R.....	709
Stewarts.....	L., N., S. & N. A. R. R.....	464
Sunbright.....	C. S. R. R.....	1,359
Talleys.....	D. R. V. R. R.....	789
Taylor's.....	L., N., S. & N. A. R. R.....	307
Tennessee Ridge.....	L., N., S. & N. A. R. R.....	720
Thermometer Knob.....	Guyot.....	6,157
Thompsons.....	L., N., S. & N. A. R. R.....	777
Three Brothers (highest).....	Guyot.....	5,907
Thunderhead.....	Guyot.....	5,520
Thunderknob.....	Guyot.....	5,682
Trenton.....	M. & O. R. R.....	321
Trezerant.....	L., N., S. & N., A. R. R.....	443
Tricorner Knob.....	Guyot.....	6,188
Turkey Knob.....	Guyot.....	4,740
Union.....	E. T., Va. & Ga. R. R.....	1,457
Union City.....	M. & O. R. R.....	346
Vernon Furnace.....	L., N., S. & N. A. R. R.....	367
Veto.....	L., N., S. & N. A. R. R.....	619
Wales.....	L., N., S. & N. A. R. R.....	668
Ward.....	D. R. V. R. R.....	732
Wauhatchie.....	Ala. G. S. R. R.....	690
Wells.....	L., N., S. & N. A. R. R.....	242
West Harpeth.....	L., N., S. & N. A. R. R.....	670
Whitesburgh.....	E. T., Va. & Ga. R. R.....	1,214
Withe.....	L., N., S. & N. A. R. R.....	271

TEXAS.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Albany.....	T. C. R. R.....	1,401
Alexander.....	T. C. R. R.....	1,141
Allen.....	H. & T. C. R. R.....	669
Alleyton.....	G., H. & S. A. R. R.....	193
Ames.....	T. & N. O. R. R.....	78
Angus.....	H. & T. C. R. R.....	448
Aquilla.....	T. C. R. R.....	531
Arcola.....	I. & G. N. R. R.....	66
Arroyo Escondido.....	Toner.....	2,115
Austin.....	I. & G. N. R. R.....	477
Do. (Freight Depot).....	H. & T. C. R. R.....	501
Do. (Passenger Depot).....	H. & T. C. R. R.....	513
Baird.....	T. & P. R. R.....	1,524
Banks.....	G., C. & S. F. R. R.....	702
Beaumont.....	T. & N. O. R. R.....	26
Belknap, Fort.....	Med. Dept. U. S. A.....	1,600
Belleville.....	G., C. & S. F. R. R.....	262
Bells.....	Mo., Kans. & Tex. R. R.....	675
Belmont Farm.....	Toner.....	722
Belton.....	G., C. & S. F. R. R.....	620
Benchley.....	H. & T. C. R. R.....	306
Big Mineral.....		1,228
Big Sandy, cross. T. & T. R. R. at grade.....	T. & P. R. R.....	336
Bliss, Fort.....	Med. Dept. U. S. A.....	3,830
Do..... Astronomical monument.....	Wheeler.....	3,623
Bluff.....	Toner.....	180
Blum.....	G., C. & S. F. R. R.....	592
Bonham.....	T. & P. R. R.....	582
Borden.....	G., H. & S. A. R. R.....	303
Boston.....	Smithsonian Inst.....	600
Brackettville, Signal Station.....	U. S. Signal Office.....	1,137
Brazos.....	G., C. & S. F. R. R.....	70
Brenmond.....	H. & T. C. R. R.....	467
Brenham.....	G., C. & S. F. R. R.....	301
Do.....	H. & T. C. R. R.....	350
Briar Creek.....	Toner.....	378
Brown, Fort.....	Mexican Boundary Survey.....	165
Browns.....	L. & S. V. R. R.....	286
Brownsville.....	R. G. R. R.....	33
Do... Signal Station.....	U. S. Signal Office.....	43
Bryan.....	H. & T. C. R. R.....	371
Buffalo.....	I. & G. N. R. R.....	387
Buffalo Springs.....	Smithsonian Inst.....	1,800
Burton.....	H. & T. C. R. R.....	436
Caldwell.....	G., C. & S. F. R. R.....	411
Calvert.....	H. & T. C. R. R.....	337
Camden.....	L. & S. V. R. R.....	234
Cameron.....	G., C. & S. F. R. R.....	407
Canyon.....	T. & P. R. R.....	1,015
Carbon.....	T. C. R. R.....	1,592
Castroville.....	Mexican Boundary Survey.....	672
Do... Signal Station.....	U. S. Signal Office.....	778
Cedar Grove.....	Toner.....	60
Chadbourne, Fort.....	Med. Dept. U. S. A.....	2,120
Chapel Hill.....	H. & T. C. R. R.....	337
Chappel Hill.....	Smithsonian Inst.....	542
Chenango.....	I. & G. N. R. R.....	46

Station.	Authority.	Elevation.
		<i>Feet.</i>
Roger's	G., C. & S. F. R. R.	538
Rosenberg Junction	G., C. & S. F. R. R.	100
Ross	H. & T. C. R. R.	576
Round Rock	I. & G. N. R. R.	720
San Antonio	G., H. & S. A. R. R.	683
Do.... Signal Station	U. S. Signal Office	676
Sandy Point	I. & G. N. R. R.	58
San Elciario	Mex. Boundary Survey	3,607
San Felipe	Mex. Boundary Survey	818
Schulenburg	G., H. & S. A. R. R.	341
Sealy	G., C. & S. F. R. R.	189
Seco	Toner	689
Sequin	G., H. & S. A. R. R.	559
Shelden	T. & N. O. R. R.	57
Sherman, crossing H. & T. C. R. R. at grade.	T. & P. R. R.	747
Signal Staff	R. G. R. R.	7
Sisterdale	Smithsonian Inst	1,320
Sour Lake	T. & N. O. R. R.	47
Spring	I. & G. N. R. R.	126
Springfield	Smithsonian Inst	4,500
Stockton, Fort, Signal Station	U. S. Signal Office	3,050
Stork's	I. & G. N. R. R.	385
Sulphur Springs	E. L. & R. R. R. R.	462
Summit Ridge	H. & T. C. R. R.	285
Sutton	H. & T. C. R. R.	372
Tehuacana	Toner	492
Temple Junction	G., C. & S. F. R. R.	635
Terrell	T. & P. R. R.	514
Terrett, Fort	Med. Dep. U. S. A.	1,320
Terry	T. & N. O. R. R.	23
Thompson	G., C. & S. F. R. R.	68
Do	H. & T. C. R. R.	122
Thornton	H. & T. C. R. R.	496
Tinge	Toner	892
Trinity	I. & G. N. R. R.	234
Troupe	I. & G. N. R. R.	467
Twin Butte Gap	T. & P. R. R.	1,469
Tyler	I. & G. N. R. R.	531
Union Hill	Med. Dept. U. S. A.	542
Upson	G., H. & S. A. R. R.	688
Uvalde, Signal Station	U. S. Signal Office	891
Valley Mills	G. C. & S. F. R. R.	592
Van Alstyne	H. & T. C. R. R.	803
Verde, Camp	Med. Dept. U. S. A.	1,400
Victoria Depot	G., W. T. & P. R. R.	87
Virginia Point	G., C. & S. F. R. R.	5
Wailder	G., H. & S. A. R. R.	378
Waller Waller	H. & T. C. R. R.	252
Wallis	G., C. & S. F. R. R.	131
Walnut Springs	T. C. R. R.	901
Washington	Smithsonian Inst	360
Waverly	I. & G. N. R. R.	265
Weatherford	T. & P. R. R.	864
Webberville, Parson's Seminary	Smithsonian Inst	394
Weimar	G., H. & S. A. R. R.	420
Wellborn	H. & T. C. R. R.	324
West Bernard	G., H. & S. A. R. R.	163
West Creek	G. W. T. & P. R. R.	126
Westfield	I. & G. N. R. R.	114
Wheelock	Smithsonian Inst	450
White Cloud	Toner	255
Whitehouse	I. & G. N. R. R.	471
Whitewright	Mo., Kans. & Tex. R. R.	748

Station.	Authority.	Elevation.
		<i>Feet.</i>
Whitney	T. C. R. R.	586
Wilkins	L. & S. V. R. R.	271
Willis	I. & G. N. R. R.	381
Wills' Point	T. & P. R. R.	530
Winsborough	E. L. & R. R. R. R.	532
Wortham	H. & T. C. R. R.	482
Worth, Fort	Toner	629
Yellow Prairie	G., C. & S. F. R. R.	458

(413)

Bull. 5—19

UTAH.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Adairville	Powell	4,400
Adam's Head	Powell	10,360
Adamsville	Wheeler	5,600
Akanaquint	P. R. R. Reports	4,457
Alice, Mount	Powell	9,540
Alum Beds	D. & R. G. R. R.	5,907
Ambey	C. P. R. R.	4,721
American Fork	U. C. R. R.	4,554
Do	P. R. R. Reports	4,596
Do	Wheeler	4,578
Do	Powell	4,580
Do	U. S. R. R.	4,608
Anderson Peak	Powell	10,710
Antelope Island	Wheeler	6,660
Antelope Peak	Powell	7,100
Antelope Spring	Powell	5,390
Do	Wheeler	5,850
Do	Wheeler	6,702
Do	Wheeler	7,144
Aquarius Plateau	Powell	{ 10,000
Aspen Lake	Powell	{ 11,000
Atkinson	Summit County R. R.	8,927
Averitt Spring	Summit County R. R.	6,462
		8,580
Awapa Plateau	Powell	{ 8,000
		{ 10,000
Bald Head	Powell	9,643
Bald Mountain	Powell	8,430
Bald Mountains	King	11,975
Baldy Peak	Wheeler	11,730
Bangs, Mount	Powell	7,950
Bare Bush Point (Wasatch Plateau)	Powell	10,250
Bartels, Mount	Powell	10,050
Barton Mountain	Wheeler	9,854
Bean Spring	Powell	9,230
Bear Lake	Hayden	5,911
Bear River Bridge	Wheeler	4,197
Bear Valley	Wheeler	7,071
Do	Powell	{ 6,600
		{ 7,200
Beaver	Powell	5,970
Do, astronomical station	Wheeler	5,916
Beaver Dam Mountains	Powell	8,100
Beaver Valley	D. & R. G. R. R.	4,886
Bechler, Mount	Hayden	9,716
Bellnap, Mount	Powell	12,200
Do	Wheeler	11,894
Berry's Springs	Wheeler	2,810
Big Cottonwood	U. S. R. R.	4,261
Big Dam Springs	Wheeler	4,317
Big Narrows	D. & R. G. R. R.	6,020
Big Springs	D. & R. G. R. R.	4,234
Black Cap Butte	Powell	6,530
Black Rock	U. W. R. R.	4,263
Do	U. C. R. R.	4,799
Do, bench-mark	U. S. Geol. Survey	4,250
Blacktail Peak	King	9,943
Blue Creek	C. P. R. R.	4,379

Station.	Authority.	Elevation.
		<i>Feet.</i>
Blue Gate Mesa	Powell	5,900
Blue Gate Plateau, north	Powell	6,800
Do.....south	Powell	{ 6,800 7,300
Blue Mountain	Powell	11,071
Blue Spring	Wheeler	7,131
Bonneville .....	.....	4,310
Bovine	C. P. R. R.	4,347
Bowl Valley	Powell	{ 7,600 7,700
Box Elder Peak	Wheeler	9,542
Bingham Junction	D. & R. G. R. R.	4,366
Brian, Mount	Powell	11,178
Brian's Head	Powell	11,260
Brigham City	C. P. R. R.	4,226
Do	U. & N. R. R.	4,321
Do	Wheeler	4,476
Brown's Park	Powell	{ 5,500 5,800
Brown's Peak	Powell	5,392
Bruin Point	Powell	10,150
Buckhorn Flats	D. & R. G. R. R.	5,697
Buckhorn Junction	D. & R. G. R. R.	5,692
Buck Horn Spring	Powell	5,770
Buckhorn Spring	Wheeler	5,688
Bullionville Road Crossing	D. & R. G. R. R.	5,548
Burro Peak	King	12,834
Cachill	U. & N. R. R.	4,971
Call's Fort	U. & N. R. R.	4,255
Cameron, Fort	Wheeler	6,058
Camp Floyd Pass	Simpson	5,234
Carmel, Mount	Powell	5,241
Castle Gate	D. & R. G. R. R.	6,322
Castle Rock	U. P. R. R.	6,249
Castle Valley	Powell	{ 5,000 6,500
Castle Valley Junction	D. & R. G. R. R.	5,795
Cedar City	Wheeler	5,726
Cedar Mountain Pass	P. R. R. Reports	6,364
Cedar Ridge Summit	D. & R. G. R. R.	6,228
Cedar Spring	Wheeler	5,100
Cedar Summit	D. & R. G. R. R.	4,984
Cedar Valley	Powell	{ 5,300 6,000
Centerville	U. C. R. R.	4,253
Cherry Creek	D. & R. G. R. R.	5,299
Circle Valley	D. & R. G. R. R.	6,055
Do	Powell	{ 6,000 6,300
Circleville	Wheeler	5,624
City of Rocks	Wheeler	6,078
Clarkson	Hayden	4,800
Clarkston	Powell	5,930
Clayton's Peak	King	11,889
Clear Creek	D. & R. G. R. R.	6,229
Clear Creek Mountain	Wheeler	9,132
Coal Point	Powell	6,760
Coalville	Summit Co. R. R.	5,598
Colob Plateau	Powell	{ 8,000 9,000
Copenhagen	Hayden	4,999
Corinne	C. P. R. R.	4,232
Do signal station	U. S. Signal Office	4,249
Corn Creek Settlement	Powell	4,899

Station.	Authority.	Elevation.
		<i>Feet.</i>
Carson Peak	King	9,630
Cottonwood .....	.....	4,200
Cottonwood Springs	D. & R. G. R. R.	4,661
Cousharem	Powell	6,850
Cove Creek Fort	Powell	6,000
Cove Fort Junction	D. & R. G. R. R.	5,477
Cox Peak .....	.....	13,250
Craggy Head	Powell	8,250
Crescent Gap	D. & R. G. R. R.	4,720
Crittenden, Fort	Toner	4,860
Croyden	U. P. R. R.	5,250
Cub River Bridge .....	.....	4,542
Culmination Point	Powell	9,700
Curlew	Wheeler	4,397
Dalton, Mount	Powell	10,480
Danishtown	Wheeler	4,400
Deadman's Springs .....	.....	6,782
Deep Creek	D. & R. G. R. R.	5,025
Do	Wheeler	5,237
Do	King	5,197
Delano, Mount	Powell	12,240
Dellenbaugh, Mount	Powell	6,650
Deseret	U. C. R. R.	4,541
Do	Wheeler	4,642
Desert Mountain	Wheeler	8,175
Desert Spring	Wheeler	5,887
Desert Springs	Powell	5,610
Deweyville	U. & N. R. R.	4,328
Do	Wheeler	4,415
Diamond City	Wheeler	6,369
Diamond Valley	Powell	{ 4,300
		{ 4,800
Dilley's Ranch, Hansel Spring	Wheeler	5,043
Dodoquiba Spring	P. R. R. Reports	4,659
Douglas, Camp	Wheeler	5,024
Do	astronom. mont. by level ..	4,905
Drapers	U. C. R. R.	4,443
Do	U. S. R. R.	4,513
East Fork Sevier	D. & R. G. R. R.	7,714
East Salient	Powell	7,490
East Tavaputs Plateau	Powell	{ 5,500
		{ 9,700
Echo	U. P. R. R.	5,480
Echo Park (month Yampa River)	Powell	5,080
Ellen, Mount	Powell	11,410
Ellenore, Mount	Powell	7,690
Ellen Spring	Powell	9,940
Ellsworth, Mount	Powell	8,150
El Vado de los Padres (Colorado River)	Wheeler	3,194
Do	Powell	3,220
Emma's Park	Powell	7,370
Emmons, Mount	King	13,694
Ephraim	Wheeler	5,633
Ephraim Point	Powell	8,690
Epley Butte	Powell	5,860
Escalante City	Powell	5,700
Escalante Desert	Powell	{ 5,000
		{ 5,500
E. T. City	D. & R. G. R. R.	4,272
Eureka City	Wheeler	6,400
Eyrie Peak	Wheeler	9,458
Fairfield	Wheeler	4,866
Farmington	U. C. R. R.	4,261
Faust	Wheeler	5,296

Station.	Authority.	Elevation.
		<i>Feet.</i>
Fillmore	Wheeler	6,025
Do	Powell	5,100
Fish Lake	Powell	8,790
Fish Lake Mountain	Powell	11,578
Fish Lake	Wheeler	8,763
Do	Powell	8,792
Fish Lake Plateau	Powell	{ 10,500
		{ 11,600
		{ 8,750
		{ 8,850
Fish Lake Valley	Powell	
Fish Spring	Wheeler	6,269
Flaming Gorge	Powell	5,820
Floyd, Camp (now Fairfield)	Med. Dept., U. S. A.	4,860
Do	Wheeler	4,867
Fountain Green	Wheeler	5,874
Frances Point	Powell	10,430
Frisco	U. C. R. R.	6,315
Germania	D. & R. G. R. R.	4,296
Do	U. C. R. R.	4,242
Gilbert's Peak	King	13,687
Do	King	11,100
Glencoe	Wheeler	5,221
Do Bridge	Powell	5,237
Glenwood	Powell	5,300
Goshen	Powell	4,482
Gooseberry Valley (south end)	Powell	{ 8,600
		{ 8,700
Gould's Ranch	Powell	4,052
Granite Rock	D. & R. G. R. R.	4,356
Grantville	D. & R. G. R. R.	4,251
Grass Creek Junction	Summit Co. R. R.	5,520
Grass Valley	Powell	{ 6,200
		{ 7,500
Do	Wheeler	6,857
Graves Valley	Powell	4,300
Gray Head	Powell	9,640
Great Sage Plain (mean elevation)	Hayden	6,500
Great Salt Lake (May 16, 1873)	U. S. Geological Survey	4,219
Green River	D. & R. G. R. R.	4,021
Gunnison	Powell	5,118
Do	Wheeler	5,144
Do... Tunnison's House	Powell	5,120
Gunnison	Powell	5,134
Gunnison's Crossing (Green River)	Powell	4,083
Gunnison Plateau	Powell	{ 7,000
		{ 9,800
Do	Powell	9,864
Gunnison Point	Powell	6,000
Gunnison Valley	Powell	{ 4,106
		{ 4,500
Gunsight Mountain	Hayden	8,306
Hague Spring	Powell	5,450
Half-way House	U. W. R. R.	4,326
Hampton's Bridge	Hayden	4,300
Do	Wheeler	4,700
Hanging Rock	Toner	5,974
Hansel Pass	Wheeler	5,138
Hardy's	D. & R. G. R. R.	5,427
Harry, Mount	Powell	11,300
Hawawah Spring	Wheeler	5,455
Hay Patch Spring	Wheeler	5,590
Hay Spring	Wheeler	5,092
Heber Mountain	King	10,138
Do	Powell	9,850

Station.	Authority.	Elevation.
		<i>Feet.</i>
Hebron	Powell	5,450
Do	Wheeler	5,474
Hell's Kitchen	Powell	7,641
Hensell's Spring .....	.....	5,373
Hildreth's Ranch	Wheeler	4,308
Hilgard, Mount	Powell	11,460
Hillers, Mount	Powell	10,650
Hodges, Mount	King	13,500
Holden	Powell	5,050
Holmes, Mount	Powell	7,930
Hooper's Ranch, Skull Valley	Wheeler	4,365
Horeb, Mount	King	7,831
Horn Head	Powell	10,920
Hornsilver	D. & R. G. R. R.	4,291
Horn Silver Mine	U. C. R. R.	6,449
Hot Springs	U. & N. R. R.	4,281
Hyde Park	Hayden	4,500
Do	Wheeler	4,412
Indian Head (Tavaputs Plateau)	Powell	9,810
Indian Spring	Wheeler	5,284
Iron City	Wheeler	6,099
Iron Spring	Powell	5,420
Island Park	Powell	5,000
Jackson's Mills	Wheeler	5,150
Jennings Springs	D. & R. G. R. R.	4,695
Joe's Valley	Powell	7,000
Do .....	.....	9,000
Do	Wheeler	8,420
Johnson's Pass	Whitney	6,237
Johnson Spring	Powell	5,470
Juab	U. C. R. R.	5,019
Juab Valley	Powell	5,000
		6,000
		6,000
Kaibab Plateau	Powell	8,000
Kaiparowits Peak	Powell	9,180
Kaiparowits Plateau	Powell	6,000
Do .....	.....	7,500
Do	Powell	7,489
Kanab	Wheeler	5,072
Do	Powell	4,925
Do	Powell	4,917
Do	Powell	4,947
Kanab Plateau .....	.....	7,000
Kanab Springs	Powell	5,310
Kanara	Powell	5,450
Do	Wheeler	5,419
Kansas .....	.....	6,304
Kansas Prairie	Simpson	6,242
Do	Wheeler	6,225
Katharine's Peak	Powell	9,902
Kaysville	U. C. R. R.	4,298
Kelton	C. P. R. R.	4,223
Do	Wheeler	4,222
Key	D. & R. G. R. R.	4,243
Kimball's	D. & R. G. R. R.	6,325
Kimball, Mount	Wheeler	7,777
King's Meadows	Powell	5,500
Knowlton	D. & R. G. R. R.	4,323
Lake .....	.....	4,223
Lake Butte, near Laketown	Wheeler	6,346
Lake Range (highest peak)	Powell	7,429

Station.	Authority.	Elevation.
Laketown	Hayden	<i>Feet.</i> 6,000
Do....Walstrom's shop.....	Wheeler	5,993
Lake View Peak	Hayden	7,795
La Motte Peak	King	12,892
Leeds	Powell	3,400
Lee's Springs, in Fremont Pass	Wheeler	6,893
Lehi	U. C. R. R.	4,517
Do.....	U. S. R. R.	4,586
Do.....	Wheeler	4,596
Do.....	D. & R. G. R. R.	4,544
Lemington	U. C. R. R.	4,674
Leonora Peak	Powell	8,900
Lewiston Peak	Wheeler	10,623
Lime Pass	King	10,740
Little Bitter Creek Springs.....	Powell	6,568
Little Cottonwood	U. S. R. R.	4,288
Do.....do	Wheeler	4,359
Little Creek Peak	Powell	10,010
Little's Ranch	Powell	7,000
Logan	Hayden	4,509
Do.....	U. & N. R. R.	4,507
Do.....	Wheeler	4,533
Logan Peak.....	Hayden	10,004
Do..do	Powell	7,950
Lone Peak	King	11,295
Lone Rock Valley	P. R. R. Reports.....	{ 4,400
		{ 5,400
		{ 5,000
Long Valley.....	Powell	{ 6,000
		{ 5,500
Lost Creek Valley	Powell	{ 6,000
Lovendahls	U. C. R. R.	4,277
Lucin	C. P. R. R.	4,498
McCready's Meadow.....	Powell	6,240
Mammoth Mill	Wheeler	6,947
Mansard Point	Powell	6,290
Markagunt Plateau	Powell	{ 8,000
		{ 11,000
Maroni Peak	Powell	8,010
Marsh's Peak	King	12,410
Marvine, Mount	Powell	11,600
Marysvale	D. & R. G. R. R.	5,808
Do.....	Powell	5,810
Marysvale Peak	Powell	10,359
Masnk Plateau	Powell	{ 7,700
		{ 8,200
Matlin	C. P. R. R.	4,597
Meadow Creek	Wheeler	5,992
Meadowville	Hayden	6,200
Mendon	U. & N. R. R.	4,459
Do.....	Wheeler	4,553
Midget Crest	Powell	11,414
Milford	U. C. R. R.	4,908
Mill Creek Station.....	Wheeler	6,504
Miller Creek	D. & R. G. R. R.	5,505
Mill Fork	D. & R. G. R. R.	5,791
Mills	U. C. R. R.	4,852
Mill Spring		6,504
Mill Station.....	Wheeler	6,504
Mona	U. C. R. R.	4,859
Do.....	Powell	4,900
Monroe	Powell	5,380
Monroe Peak.....	Powell	11,240
Montpelier.....	Hayden	5,793

Station.	Authority.	Elevation.
		<i>Feet.</i>
Monument	C. P. R. R.	4,227
Moraine Valley	Powell	9,000
Morgan	U. C. R. R.	10,000
Moses, Mount	Wheeler	4,220
Mounds House	Powell	8,725
Mountain City	Powell	4,940
Mountain Meadow	Powell	5,760
Mountain Spring	Wheeler	5,741
Mount Carmel	Powell	5,741
Mount Pleasant	Powell	5,250
Do	Wheeler	5,875
Musinia Peak	Powell	5,900
Naomi Peak	Powell	10,940
Narrows	Wheeler	9,951
Navajo Well Point	D. & R. G. R. R.	4,498
Nebo, Mount	Powell	6,460
Do	Wheeler	11,992
Neels	Powell	11,680
Nephi	U. C. R. R.	4,356
Do	Powell	5,130
Do	U. C. R. R.	5,056
Do	P. R. R. Reports	4,938
Do	Wheeler	4,920
Newfoundland Mountain	Wheeler	7,045
New Point	Powell	5,120
Nomansville Summit	D. & R. G. R. R.	6,805
North Logan Peak	Hayden	10,004
North Ogden	Wheeler	4,509
North Ogden Mountain	Wheeler	9,695
North Promontory Peak	Wheeler	7,134
North Willard	Wheeler	4,276
Oak Creek	Wheeler	5,158
Oak Pass	Simpson	7,200
Oak Springs .....	.....	6,790
Observatory Peak	Wheeler	9,589
Odoriferous Spring	Powell	6,610
Ogden, junc. with U. P. & U. C. R. R.	C. P. R. R.	4,303
Do	Wheeler	4,374
Pahrea Summit	D. & R. G. R. R.	7,731
Panguitch	Wheeler	6,273
Do	Powell	6,560
Panguitch Lake	Powell	8,130
Panguitch Hayfields	Powell	7,000
Paradise	Wheeler	to 7,500
Paragoonah	Wheeler	4,863
Pana	Wheeler	6,222
Park City	Wheeler	4,562
Parowan	Summit Co. R. R.	6,851
Do	Powell	5,970
Do	Wheeler	5,910
Parowan Valley	Powell	5,900
Patmos Head	Powell	to 6,200
Paunsagunt Plateau	Powell	9,830
Payson	P. R. R. Reports	8,000
Do	Wheeler	to 9,300
Do	U. C. R. R.	4,541
Do	U. S. R. R.	4,523
Pelican Peak	Powell	4,548
Pennell, Mount	Powell	4,613
Penellen Pass	Powell	7,430
Penellen Spring	Powell	11,320
Petersen	Powell	7,730
	U. P. R. R.	7,730
		4,907

Station.	Authority.	Elevation.
		<i>Feet.</i>
Phillips Village	Wheeler	4,327
Pilot Peak	Wheeler	10,900
Pilot Springs	Wheeler	4,704
Pine Valley	Powell	{ 5,200
Pine Valley Mountain	Powell	{ to 6,000
Pink Cliff	Powell	10,250
Pipe Springs	Powell	9,260
Pleasant Grove	Powell	4,590
Do	U. C. R. R.	4,495
Pleasant, Mount	U. S. R. R.	4,557
Do	Wheeler	5,875
Do	Wheeler	5,898
Pleasant Valley P. O.	Powell	6,064
Pleasant Valley	Wheeler	{ 7,500
Plymouth	Powell	{ to 8,200
Point Carbon	Hayden	4,500
Point Nelson	King	11,443
Portage	King	11,443
Potato Valley	Powell	10,670
Prattville	Hayden	4,700
Promontory	Wheeler	{ 5,700
Do	Wheeler	{ to 7,000
Provo	Powell	5,240
Do	C. P. R. R.	4,905
Do	Wheeler	7,459
Do	D. & R. G. R. R.	4,517
Do	U. C. R. R.	4,456
Do	U. S. R. R.	4,520
Do	Wheeler	4,567
Do	Powell	4,547
Provo Peak (Wasatch Mountains)	Wheeler	11,066
Do	Powell	11,000
Rabbit Valley	Powell	{ 6,800
Randolph	Powell	{ to 7,500
Rattlesnake Point	Hayden	6,442
Red Cañon Summit	D. & R. G. R. R.	5,701
Red Plateau	D. & R. G. R. R.	7,910
Richey's Ranch	Powell	{ 6,000
Richfield	Powell	{ to 7,500
Richmond	Powell	6,169
Do	Wheeler	5,233
Do	Hayden	4,537
Do	U. & N. R. R.	4,536
Do	Wheeler	4,656
Riverside	U. C. R. R.	4,583
Rockfield	U. C. R. R.	5,232
Rocky Rest Spring	D. & R. G. R. R.	4,510
Round Lake Valley	Powell	{ 5,500
Round Prairie	Powell	{ to 6,000
Round Valley	Simpson	5,571
Rush Valley	Powell	{ 5,300
Do	Powell	{ to 6,000
Do	Simpson	5,200
Do	Wheeler	5,234
Do	Powell	{ 4,500
Sahara Plateau	Powell	{ to 5,300
Saint George	Powell	4,500
Saint Mary's	Powell	{ to 5,200
Salem (Pondtown)	Toner	2,880
Salina	Powell	6,200
Salina Summit	Powell	4,580
Salt Lake City	D. & R. G. R. R.	5,182
Do	D. & R. G. R. R.	7,927
Do	D. & R. G. R. R.	4,228
Do	Powell	4,354

Station.	Authority.	Elevation.
		<i>Fect.</i>
Salt Lake City	U. C. R. R.	4,261
Do.....base merid. monument.....	U. S. Geol. Survey.....	4,334
Do.....Signal Station.....	U. S. Signal Office.....	4,346
Do.....observatory pier.....	U. S. Geol. Survey.....	4,334
Salt Lake Desert.....	Powell	4,200
		} to 5,000
Salt Lake Valley.....		4,200
		} to 4,500
Salt Spring Ranch.....	Wheeler	4,634
Salt Wells	Wheeler	4,203
Sandy	U. C. R. R.	4,399
Do.....	U. S. R. R.	4,457
San Francisco Spring.....	Wheeler	6,527
San Pete Valley	Powell	5,200
		} to 6,200
San Rafael River.....	D. & R. G. R. R.	5,331
San Rafael Valley	Powell	4,100
		} to 4,200
Santa Clara Settlement.....	Powell	2,900
Santaquin	Powell	5,030
Do.....	U. C. R. R.	4,813
Do.....	U. S. R. R.	4,884
Santaquin Mountains (Wasatch Range).....	Powell	9,670
Saw Tooth Narrows	D. & R. G. R. R.	6,527
Scipio	Powell	5,260
Do.....	Wheeler	5,115
Scofield.....	D. & R. G. R. R.	7,832
Section Ridge	King	8,268
Session Settlement	P. R. R. Reports.....	4,183
Sevier Cañon	D. & R. G. R. R.	5,482
Sevier Desert	Powell	5,000
		} to 5,400
Sevier Lake.....	Wheeler	4,600
Sevier Lake Desert.....	Wheeler	4,874
Sevier Pass (west side).....	Wheeler	4,768
Sevier Plateau	Powell	9,000
		} to 10,300
Sevier River Bridge	Powell	4,888
Do.....	Wheeler	5,283
Sheep Salient	Powell	5,560
Sheep Trough Spring.....	Powell	4,600
Shinarump	Powell	5,330
Shoonesburg	Wheeler	3,921
Short Cut Pass.....	Simpson.....	5,347
Silver City.....		6,369
Skull Valley	Simpson.....	4,850
Do.....	Wheeler	4,356
Skumpah	Wheeler	6,142
Skutumpa or Clarkston.....	Powell	5,930
Smithfield	Hayden	4,565
Do.....	U. & N. R. R.	4,562
Do.....	Wheeler	4,623
Soldier Summit	D. & R. G. R. R.	7,465
Solitude Peak	Powell	8,800
Sorenson Waterpocket.....	Powell	5,630
South Promontory Mountain.....	Wheeler	7,460
South Tent (Wasatch Plateau)	Powell	11,240
Spanish Fork	D. & R. G. R. R.	4,865
Do.....	U. C. R. R.	4,493
Do.....	U. S. R. R.	4,556
Spanish Fork Peak	Powell	9,970
Spanish Valley.....	Powell	3,900
		} to 5,300
Split Mountain.....	King	8,865

Station.	Authority.	Elevation.
		<i>Feet.</i>
Springville	D. & R. G. R. R.	4,566
Do	U. C. R. R.	4,451
Do	U. S. R. R.	4,525
Stevenson, Camp		5,930
Stevenson, Mount	Powell	10,840
Strawberry Peak	Powell	9,020
Strawberry Valley	Powell	7,400
Sulphur Springs	D. & R. G. R. R.	6,493
Do	(Escalante Desert) Powell	5,101
Do	Wheeler	5,400
Summit (Bradbury's)	D. & R. G. R. R.	7,190
Summit Valley	Powell	6,500
Swallow Park	Powell	6,400
Table Cliff	Powell	10,070
Table Cliff Plateau	Powell	10,000
Tantalus Point (Aquarius Plateau)	Powell	10,670
Ten-Mile House	Wheeler	5,086
Terminus	U. W. R. R.	4,991
Terrace	C. P. R. R.	4,544
Terrace Mountains	King	6,900
Terrell's Ridge	Powell	11,380
Terry's Ranch	Powell	5,660
Thistle Creek	D. & R. G. R. R.	5,043
Thistle Creek Peak	Powell	8,510
Thistle Valley	Powell	5,500
Thousand Lake Mountain	Powell	11,240
Three Lakes	Powell	5,380
Three Trees Point	Powell	6,990
Timpanogos Mountain	King	11,957
Tingley Peak	Powell	10,260
Tintic	Wheeler	4,833
Tit Mesa	Powell	7,650
Tockwanna Peak	King	13,458
Tomasaki, Mount	Hayden	12,271
Tongue Salient	Powell	9,980
Tooele Peak	Wheeler	10,396
Toponce Ranch	Wheeler	4,583
Toquerville	Powell	3,100
Trumbull, Mount	Powell	8,187
Tuilla Valley	P. R. R. Reports	4,487
Tukuhnikavatz, Mount	Hayden	10,815
Tununk Plateau	Powell	6,500
Twin Peak	King	11,563
Uinta	U. P. R. R.	4,519
Uinta Agency		6,133
Uinta River (mouth of)	Powell	4,670
Uinta Valley	Powell	4,700
Un-kar-pagu	Powell	11,595
Upper Kanab	Powell	6,890
Utah Lake (mean stage)	U. S. R. R.	4,499
Utah Lake Valley	Simpson	4,540
Utah Valley	Powell	4,500
Ute Peak	King	8,067
Van Buren's Ranch	Powell	5,990
Virgin Peak	Powell	8,000
Wasa, Mount	Hayden	12,561
Do	Powell	12,320

Station.	Authority.	Elev
Waldsburg.....	Powell.....	
Walter, Mount.....	Powell.....	
Wanship.....	Summit Co. R. R.....	
Warm Spring.....	Wheeler.....	
Wasatch.....	U. P. R. R.....	
Wasatch Plateau.....	Powell.....	{ to
Washi-pah-ghum Spring.....		
Washington.....	Powell.....	
Do.....	Wheeler.....	
Waterpocket Fold.....	Powell.....	{ to
Weber.....	U. P. R. R.....	
Wellsville.....	Hayden.....	
Do.....	Wheeler.....	
Wheeler's Crag.....	Powell.....	
White Knob.....	Powell.....	
White Lake.....	Powell.....	
White Rock Spring, Skull Valley.....	King.....	
White Sulphur Spring.....		
White Valley.....	Simpson.....	
Do.....	Wheeler.....	
Willard City.....	U. & N. R. R.....	
Do.....	Wheeler.....	
Do.....	Hayden.....	
Wilson's Peak.....	King.....	
Wilson Spring.....	D. & R. G. R. R.....	
Wonsits Valley.....	Powell.....	{ to
Bradford Station.....	Conn. & Pass. R. R. R.....	
Wood's Crossing.....	U. C. R. R.....	
Workman's Ranch.....	Powell.....	
Yampa Plateau.....	Powell.....	{ to
York.....	Powell.....	
Do.....	U. S. R. R.....	
Young Point.....	Powell.....	
Young's Ranch.....	Wheeler.....	

VERMONT.

Station.	Authority.	Elevation.
		<i>Feet.</i>
.....	Cent. Vt. R. R.	127
Springe	Cent. Vt. R. R.	119
Mount	Geol. Survey of Vt	2,506
Mount	Geol. Survey of Vt	3,320
ntain	Geol. Survey of Vt	3,124
.....	Conn. & Pass. R. R. R.	466
action	M. & W. R. R. R.	515
.....	Conn. & Pass. R. R. R.	969
lle	Cent. Vt. R. R.	469
'alls	Cheshire R. R.	305
.....	Cent. Vt. R. R.	276
.....	Cent. Vt. R. R.	576
.....	Cent. Vt. R. R.	345
le	M. & W. R. R. R.	624
Station	Conn. & Pass. R. R. R.	410
.....	Cent. Vt. R. R.	784
.....	Cent. Vt. R. R.	353
ro	Vt. Valley R. R.	228
.....	Cent. Vt. R. R.	301
ount	Petermann	3,500
n	Cent. Vt. R. R.	109
Signal Station	U. S. Signal Office	268
Centre Junction	Port. & Ogden R. R.	473
ump	Guyot	4,088
1	Cent. Vt. R. R.	921
.....	Cent. Vt. R. R.	161
.....	Cent. Vt. R. R.	501
1	Cent. Vt. R. R.	639
r	Cent. Vt. R. R.	326
ut River Bridge, grade	Cent. Vt. R. R.	352
ille	Cent. Vt. R. R.	1,011
.....	Port. & Ogden R. R.	1,375
.....	Conn. & Pass. R. R. R.	1,056
ton	Vt. Valley R. R.	263
eshire	Missisquoi R. R.	441
field	Port. & Ogden R. R.	421
ilwick	Port. & Ogden R. R.	1,087
agate	Port. & Ogden R. R.	365
tpelier	M. & W. R. R. R.	720
ey	Vt. Valley R. R.	296
t Johnsbury	P. & O. R. R.	796
ford Depot	Conn. & Pass. R. R. R.	413
ingford	Cent. Vt. R. R.	1,195
Falls	Missisquoi R. R.	436
ount	Geol. Survey of Vt	3,148
Mountain	Guyot	3,872
action	Cent. Vt. R. R.	350
.....	Port. & Ogden R. R.	369
tation	Conn. & Pass. R. R. R.	438
.....	Port. & Ogden R. R.	431
.....	Cent. Vt. R. R.	715
.....	Cent. Vt. R. R.	365
rough	Port. & Ogden R. R.	1,166
.....	M. & W. R. R. R.	773
ond	M. & W. R. R. R.	1,094
t	Port. & Ogden R. R.	881
.....	Woodstock R. R.	485
.....	Cent. Vt. R. R.	423

Station.	Authority.	Elevation.
		<i>Feet.</i>
Healdville	Cent. Vt. R. R.	1,379
Herrick	Geol. Survey of Vt.	2,661
Do	Guyot	2,692
Highgate Centre	Port. & Ogden R. R.	312
Hinsdale	Ashuelot R. R.	341
Hogback	Guyot	3,648
Holly, Mount	Cent. Vt. R. R.	1,359
Hyde Park	Port. & Ogden R. R.	586
Island Pond	Grand Trunk R. R.	1,181
Ives Pond (West Danville)	Port. & Ogden R. R.	1,553
Jay Peak	Geol. Survey of Vt.	4,018
Johnson	Port. & Ogden R. R.	541
Killington Peak	Guyot	4,221
Lake Champlain	Port. & Ogden R. R.	101
Lanesville	M. & W. R. R. R.	1,347
Leicester Junction	Cent. Vt. R. R.	351
Lincoln, Mount	Guyot	4,078
Ludlow	Cent. Vt. R. R.	1,061
Lydonville	Conn. & Pass. R. R. R.	741
McIndoe's Depot	Conn. & Pass. R. R. R.	488
McIndoe's Falls	Conn. & Pass. R. R. R.	455
Mansfield, Mount	Guyot	4,430
Marshfield	M. & W. R. R. R.	1,140
Middlebury	Cent. Vt. R. R.	341
Middlesex	Cent. Vt. R. R.	541
Milton	Cent. Vt. R. R.	361
Montpelier	M. & W. R. R. R.	484
Montpelier Junction	Cent. Vt. R. R.	529
Morrisville	Port. & Ogden R. R.	657
Newbury Depot	Conn. & Pass. R. R. R.	426
New Haven	Cent. Vt. R. R.	291
North Ferrisburg	Cent. Vt. R. R.	131
Northfield	Cent. Vt. R. R.	739
North Hartland	Cent. Vt. R. R.	387
North Sheldon	Missisquoi R. R.	393
North Stratford Station	Geol. Survey of N. H.	915
North Thetford Depot	Conn. & Pass. R. R. R.	402
Norwich Depot	Conn. & Pass. R. R. R.	406
Pico Peak	Guyot	3,954
Piermont Station	Conn. & Pass. R. R. R.	440
Pittsford	Cent. Vt. R. R.	327
Plainfield	M. & W. R. R. R.	752
Potato Hill	Geol. Survey of Vt.	3,986
Proctorsville	Cent. Vt. R. R.	921
Prospect Mountain	Geol. Survey of Vt.	2,690
Putney	Vt. Valley R. R.	257
Quechee	Woodstock R. R.	650
Randolph	Cent. Vt. R. R.	698
Richford	Missisquoi R. R.	473
Richmond	Cent. Vt. R. R.	328
Rockingham	Cent. Vt. R. R.	333
Rouse's Point	Cent. Vt. R. R.	120
Roxbury	Cent. Vt. R. R.	1,016
Royalton	Cent. Vt. R. R.	517
Rutland	Cent. Vt. R. R.	519
Rutland Centre	Cent. Vt. R. R.	490
Ryegate, Depot platform	Conn. & Pass. R. R. R.	472
Saint Albans	Cent. Vt. R. R.	390
Saint Johnsbury	Conn. & Pass. R. R. R.	591
Salisbury	Cent. Vt. R. R.	346
Saltash Mountain	Geol. Survey of Vt.	2,850
Sharon	Cent. Vt. R. R.	507
Shelburne	Cent. Vt. R. R.	157
Sheldon	Port. & Ogden R. R.	37

Station.	Authority.	Elevation.
		<i>Fect.</i>
Shrewsbury Peak	Guyot.....	3,845
Snake Mountain.....	Geol. Survey of Vt.....	1,310
South Royalton	Cent. Vt. R. R.....	508
South Ryegate	M. & W. R. R. R.....	724
South Vernon	Vt. Valley R. R.....	261
Springfield Station, Summit at.....	Sullivan Co. (N. H.) R.R.....	374
Sterling, Mount	Geol. Survey of Vt.....	3,700
Sutherland Falls.....	Cent. Vt. R. R.....	433
Swanton.....	Port. & Ogden R. R.....	160
Taftsville	Woodstock R. R.....	657
Vergennes	Cent. Vt. R. R.....	201
Walden.....	Port. & Ogden R. R.....	1,673
Waterbury.....	Cent. Vt. R. R.....	434
Wells River	M. & W. R. R. R.....	443
West Concord	Port. & Ogden R. R.....	851
West Danville	Port. & Ogden R. R.....	1,558
West Hartford	Cent. Vt. R. R.....	431
Westminster	Vt. Valley R. R.....	264
White River Junction	Cent. Vt. R. R.....	369
White Rocks	Geol. Survey of Vt.....	2,532
Williston	Cent. Vt. R. R.....	312
Windsor	Cent. Vt. R. R.....	331
Winoski	Cent. Vt. R. R.....	190
Wolcott.....	Port. & Ogden R. R.....	705
Woodstock Station	Woodstock R. R.....	697

VIRGINIA.

Station.	Authority.	Eleva
Abingdon	N. & W. R. R.	5
Afton	C. & O. R. R.	1
Alexandria, O. & A. R. R. depot	City Engineer	
Do W. & O. R. R. depot	City Engineer	
Do W. A. & G. R. R. depot	City Engineer	
Do A. & F. R. R. depot	City Engineer	
Alleghany	N. & W. R. R.	1
Do	C. & O. R. R.	2
Allen Creek	R. & A. R. R.	
Amelia	R. & D. R. R.	
Amherst Court House	U. S. C. & G. S.	
Anderson's	C. & O. R. R.	
Arcadia	Shenandoah Valley R. R.	
Arlington	U. S. C. & G. S.	
Ashby	Shenandoah Valley R. R.	
Ashcake	C. & O. R. R.	
Ashland	R. F. & P. R. R.	
Atlee's	C. & O. R. R.	
Backbone	C. & O. R. R.	1
Balcony Falls	R. & A. R. R.	
Baldwin	R. & A. R. R.	
Barksdale	P. A. L. R. R.	
Bealeton	W. C., Va. M. & G. S. R. R.	
Beaver Dam	C. & O. R. R.	
Bellew's	V. R. R.	
Bellfield	Peters R. R.	
Bell's Valley	C. & O. R. R.	1
Bentonville	Shenandoah Valley R. R.	
Berryville	Shenandoah Valley R. R.	
Bethel	R. & A. R. R.	
Big Island	R. & A. R. R.	
Big Lick	N. & W. R. R.	
Big Spring	N. & W. R. R.	1
Big Tunnel	N. & W. R. R.	1
Blacks and Whites	N. & W. R. R.	
Blue Ridge	N. & W. R. R.	1
Do depot	C. & O. R. R.	1
Do (Keyes' Gap)	W. & O. R. R.	
Do Summit	C. & O. R. R.	1
Do Tunnel	C. & O. R. R.	1
Bluff Mountain	U. S. C. & G. S.	3
Bolling Hall	J. R. & K. Canal	
Bolling Island	J. R. & K. Canal	
Bolling's Landing	J. R. & K. Canal	
Bonsacks	N. & W. R. R.	
Boscobel	R. & A. R. R.	
Boston	P. A. L. R. R.	
Boswell	R. & A. R. R.	
Boulton	R., F. & P. R. R.	
Boyceville	Shenandoah Valley R. R.	
Brand	C. & O. R. R.	1
Brandy	W. C., Va. M. & G. S. R. R.	
Bremo	J. R. & K. Canal	
Do Bluff	R. & A. R. R.	
Bristoe	W. C., Va. M. & G. S. R. R.	
Broad Run	W. C., Va. M. & G. S. R. R.	
Broadway	V. R. R.	1,

Station.	Authority.	Elevation.
		<i>Feet.</i>
Brooke.....	R., F. & P. R. R.....	66
Brown's.....	R. & A. R. R.....	291
Buchanan.....	Shenandoah Valley R. R.....	837
Buckner.....	C. & O. R. R.....	328
Buckton.....	W. C., Va. M. & G. S. R. R.....	508
Buffalo Forge.....	Shenandoah Valley R. R.....	755
Do Gap.....	C. & O. R. R.....	1,882
Do Mountain.....	U. S. C. & G. S.....	3,971
Buford's.....	N. & W. R. R.....	1,014
Bull Mountain.....	U. S. C. & G. S.....	3,216
Bull Run Mountain.....	U. S. C. & G. S.....	1,375
Bumpass.....	C. & O. R. R.....	329
Burke's.....	W. C., Va. M. & G. S. R. R.....	258
Burkeville.....	R. & D. R. R.....	523
Cady.....	C. & O. R. R.....	106
Cahas Mountain.....	U. S. C. & G. S.....	3,571
Callaghan.....	C. & O. R. R.....	1,428
Campbell.....	C. & O. R. R.....	356
Cape Henry, Signal Station.....	U. S. Signal Office.....	16
Capon Road.....	V. R. R.....	701
Catlett's.....	W. C., Va. M. & G. S. R. R.....	250
Cedar Point.....	R. & A. R. R.....	159
Cedarville.....	Shenandoah Valley R. R.....	569
Central Depot.....	N. & W. R. R.....	1,785
Charlottesville.....	C. & O. R. R.....	450
Chatham.....	W. C., Va. M. & G. S. R. R.....	624
Cherry Hill.....	B. & P. R. R.....	7
Chester.....	R. & P. R. R.....	143
Chickahominy Bridge.....	C. & O. R. R.....	94
Chincoteague, Signal Station.....	U. S. Signal Office.....	18
Christiansburg.....	N. & W. R. R.....	2,012
Chula.....	P. A. L. R. R.....	280
Church Road.....	N. & W. R. R.....	303
Churchwood.....	N. & W. R. R.....	1,766
Clark Mountain.....	U. S. C. & G. S.....	1,097
Clark's Gap.....	W. & O. R. R.....	578
Clay's.....	N. & W. R. R.....	863
Clifton.....	W. C., Va. M. & G. S. R. R.....	170
Do Forge.....	C. & O. R. R.....	1,052
Clover.....	P. A. L. R. R.....	491
Cloverdale.....	Shenandoah Valley R. R.....	1,125
Coalfield.....	P. A. L. R. R.....	323
Cobham.....	W. C., Va. M. & G. S. R. R.....	401
Cohoke.....	R., Y. R. & C. R. R.....	40
Coleman Falls.....	R. & A. R. R.....	578
Columbia.....	R. & A. R. R.....	206
Concord.....	N. & W. R. R.....	833
Contention.....	J. R. & K. Canal.....	143
Copeland.....	C. & O. R. R.....	1,246
Covington.....	C. & O. R. R.....	1,245
Cowan's.....	V. R. R.....	1,107
Cow Pasture Bridge.....	C. & O. R. R.....	1,135
Craigsville.....	C. & O. R. R.....	1,515
Crane.....	C. & O. R. R.....	1,366
Crimora.....	Shenandoah Valley R. R.....	1,242
Crozet.....	C. & O. R. R.....	718
Culpeper.....	W. C., Va. M. & G. S. R. R.....	403
Do... Baptist Church.....	U. S. C. & G. S.....	534
Do... Court-House.....	U. S. C. & G. S.....	512
Danville.....	W. C., Va. M. & G. S. R. R.....	413
Dawson.....	C. & O. R. R.....	324
Delaplane.....	W. C., Va. M. & G. S. R. R.....	455
Dispatch.....	R., Y. R. & C. R. R.....	67
Disputanta.....	N. & W. R. R.....	117

Station.	Authority.	Elevation.
		<i>Feet.</i>
Dover	R. & A. R. R.	143
Drewry Bluff	R. & P. R. R.	119
Drummond, Lake	Toner	21
Dry Fork	W. C., Va. M. & G. S. R. R.	624
Dublin	N. & W. R. R.	2,066
Do.	C. & O. R. R.	1,484
Eagle Rock	R. & A. R. R.	936
East Liberty	Shenandoah Valley R. R.	936
Edinburgh	V. R. R.	835
Elba	R., F. & P. R. R.	183
Elizabeth Furnace	C. & O. R. R.	1,842
Elk Creek Mills	J. R. & K. Canal	435
Elk Hill	R. & A. R. R.	138
Elk Island	R. & A. R. R.	138
Elkton	Shenandoah Valley R. R.	938
Ellerslie	J. R. & K. Canal	143
Ellerson	C. & O. R. R.	106
Elliot Knob	U. S. C. & G. S.	4,473
Emory and Henry College	N. & W. R. R.	2,096
Evington	W. C., Va. M. & G. S. R. R.	724
Fairfax	W. C., Va. M. & G. S. R. R.	332
Fairfield	Shenandoah Valley R. R.	22
Fair Oaks	R., Y. R. & C. R. R.	63
Falls Church	U. S. C. & G. S.	34
Fall Creek	W. C., Va. M. & G. S. R. R.	35
Farmville	N. & W. R. R.	16
Farmwell	W. & O. R. R.	320
Ferrol	C. & O. R. R.	1,110
Fishersville	C. & O. R. R.	1,320
Fish Haul	R., Y. R. & C. R. R.	44
Ford's	N. & W. R. R.	307
Forest	N. & W. R. R.	377
Do.	V. R. R.	353
Fork Mountain	U. S. C. & G. S.	3,351
Fort Defiance	V. R. R.	1,247
Fort Runyan	B. & P. R. R.	27
Four Mile Run	B. & P. R. R.	50
Franconia	B. & P. R. R.	234
Fredericksburgh	R., F. & P. R. R.	44
Fredericks Hall	C. & O. R. R.	347
Front Royal	Shenandoah Valley R. R.	495
Do.	W. C., Va. M. & G. S. R. R.	546
Gainesville	W. C., Va. M. & G. S. R. R.	357
Gala Water	R. & A. R. R.	936
Gall's Quarry	J. R. & K. Canal	208
Galt's Mills	J. R. & K. Canal	463
Galtville	R. & A. R. R.	455
Garnett	C. & O. R. R.	111
Garysburgh	P. & R.	145
Gish's	A., M. & O. R. R.	922
Glade Spring	A., M. & O. R. R.	2,088
Gladstone	R. & A. R. R.	399
Glen Allen	R. & A. R. R.	355
Glenlyn	N. & W. R. R.	1,222
Glenwood	R. & A. R. R.	715
Do.	Shenandoah Valley R. R.	60
Gordonsville	C. & O. R. R.	495
Goshen	C. & O. R. R.	1,110
Do. Bridge	C. & O. R. R.	1,110
Greenbay	P., A. L. R. R.	589
Green Springs	C. & O. R. R.	529
Greenville	Shenandoah Valley R. R.	1,560
Greenway	R. & A. R. R.	383
Greenwood	C. & O. R. R.	1,068

Station.	Authority.	Elevation.
		<i>Feet.</i>
wood Tunnel.....	C. & O. R. R.....	1,072
hs.....	C. & O. R. R.....	1,166
Hill.....	Shenandoah Valley R. R.....	966
rd.....	W. & O. R. R.....	415
y's.....	R., F. & P. R. R.....	121
Way.....	R. & P. R. R.....	114
ton.....	W. & O. R. R.....	454
er.....	C. & O. R. R.....	82
o... Junction.....	C. & O. R. R.....	134
r Creek.....	W. C., Va. M. & G. S. R. R.....	790
vare.....	R. & A. R. R.....	266
onburgh.....	V. R. R.....	1,338
arket.....	W. C., Va. M. & G. S. R. R.....	337
on.....	W. & O. R.....	395
tts.....	C. & O. R. R.....	278
nb Rock.....	R. & A. R. R.....	508
on.....	Shenandoah Valley R. R.....	1,348
rdaville.....	R. & A. R. R.....	315
back Mountain.....	U. S. C. & G. S.....	3,646
ary.....	R., F. & P. R. R.....	214
et.....	C. & O. R. R.....	100
rs.....	W. & O. R. R.....	345
i Rock.....	R. & A. R. R.....	780
reek.....	Shenandoah Valley R. R.....	1,010
.....	R. & A. R. R.....	159
.....	N. & W. R. R.....	87
.....	C. & O. R. R.....	545
on.....	R. & A. R. R.....	845
on's River.....	C. & O. R. R.....	1,136
n Mountain.....	U. S. C. & G. S.....	3,161
ts.....	Peters. R. R.....	154
ng's Ordinary.....	P. A. L. R. R.....	498
ville.....	P. A. L. R. R.....	446
ns.....	F., O. & C. R. R.....	455
a Falls.....	R. & A. R. R.....	455
town.....	V. R. R.....	744
ck.....	W. C., Va. M. & G. S. R. R.....	436
ille.....	P. A. L. R. R.....	626
.....	R., F. & P. R.....	212
ill.....	Shenandoah Valley R. R.....	895
.....	C. & O. R. R.....	1,511
.....	R. & A. R. R.....	106
.....	C. & O. R. R.....	1,618
nge.....	W. C., Va. M. & G. S. R. R.....	739
er's Road.....	U. S. C. & G. S.....	683
urgh Signal.....	W. & O. R. R.....	321
urgh.....	R. & A. R. R.....	958
gton.....	N. & W. R. R.....	969
y.....	W. C., Va. M. & G. S. R. R.....	916
ay.....	W. C., Va. M. & G. S. R. R.....	477
le.....	V. R. R.....	1,242
.....	Shenandoah Valley R. R.....	968
laird.....	R. & A. R. R.....	784
o.....	Shenandoah Valley R. R.....	800
art's Gap.....	W. & O. R. R.....	896
i.....	Shenandoah Valley R. R.....	1,785
Branch.....	B. & P. R. R.....	82
ale.....	C. & O. R. R.....	1,166
Mountain.....	U. S. C. & G. S.....	1,436
ne.....	R. & A. R. R.....	142
Court-House.....	C. & O. R. R.....	452
oor.....	C. & O. R. R.....	1,156
's.....	N. & W. R. R.....	791
o.....	W. C., Va. M. & G. S. R. R.....	833

Station.	Authority.	Elevation.
		<i>Feet.</i>
Luray	Shenandoah Valley R. R.	822
Lynchburgh	W. C., Va. M. & G. S. R. R.	529
Do.....Court House.....	U. S. C. & G. S.	796
Do.....Signal Station.....	U. S. Signal Office	652
Lynch's.....	W. C., Va. M. & G. S. R. R.	730
Lyndhurst	Shenandoah Valley R. R.	1,340
Madison	W. C., Va. M. & G. S. R. R.	395
Maiden Adventure.....	R. & A. R. R.	143
Manakin	R. & A. R. R.	141
Manassas Junction.....	W. C., Va. M. & G. S. R. R.	317
Manchester	P. A. L. R. R.	38
Manchester Crossing	R. & P. R. R.	102
Manor	Shenandoah Valley R. R.	497
Manteo	R. & A. R. R.	324
Marion	N. & W. R. R.	2,136
Markham	W. C., Va. M. & G. S. R. R.	552
Marksville	Shenandoah Valley R. R.	1,066
Marlbrook	Shenandoah Valley R. R.	1,165
Marshall Mountain.....	U. S. C. & G. S.	3,374
Martin's	N. & W. R. R.	1,919
Mason's	F., O. & C. R. R.	485
Mason's Tunnel.....	C. & O. R. R.	1,592
Do.....Depot.....	C. & O. R. R.	1,551
Mattoaca	R. & A. R. R.	375
Mattoax	P. A. L. R. R.	223
Mawrertown	V. R. R.	788
Max Meadows.....	N. & W. R. R.	2,028
Meadow	R., Y. R. & C. R. R.	89
Mechum's River.....	C. & O. R. R.	550
Meherrin	P. A. L. R. R.	589
Melton	C. & O. R. R.	519
Michaux's Ferry.....	J. R. & K. Canal.....	143
Middleton Mills.....	R. & A. R. R.	231
Do.....	J. R. & K. Canal.....	234
Middletown	V. R. R.	660
Midland	W. C., Va. M. & G., S. R. R.	321
Do.....Junction	R. & A. R. R.	504
Midway Mills	R. & A. R. R.	340
Millboro'	C. & O. R. R.	1,679
Do.....Bridge	C. & O. R. R.	1,642
Milford	R., F. & P. R. R.	100
Miller	R. & A. R. R.	725
Mitchell's	W. C., Va. M. & G. S. R. R.	350
Mossing Ford	P. A. L. R. R.	360
Mount Crawford	V. R. R.	1,171
Mount Jackson	V. R. R.	916
Mount Pleasant	B. & P. R. R.	11
Mount Sidney	V. R. R.	1,258
Munson's Hill.....	U. S. C. & G. S.	383
Narrows	N. & W. R. R.	1,546
Natural Bridge.....	R. & A. R. R.	736
Neabsco	B. & P. R. R.	30
New Canton	J. R. & K. Canal.....	223
New Market	R. & A. R. R.	350
Do.....	V. R. R.	971
New River Depot.....	N. & W. R. R.	1,757
New's Ferry	P. A. L. R. R.	340
Newtown	V. R. R.	731
Noel's.....	C. & O. R. R.	254
Nokesville	W. C., Va. M. & G. S. R. R.	270
Norfolk, Signal Station.....	U. S. Signal Office.....	30
North Anna	C. & O. R. R.	244
North Mountain.....	C. & O. R. R.	2,064
North Mountain Summit	C. & O. R. R.	2,074

Station.	Authority.	Elevation.
		<i>Feet.</i>
Nottaway.....	N. & W. R. R.....	421
Orange Court-House.....	W. C., Va. M. & G. S. R. R.....	506
Otter River.....	W. C., Va. M. & G. S. R. R.....	665
Overall.....	Shenandoah Valley R. R.....	662
Paddy, Cacapon Gap.....	W. & O. R. R.....	2,009
Pamplin's.....	N. & W. R. R.....	678
Panther Gap.....	C. & O. R. R.....	1,594
Patterson.....	Shenandoah Valley R. R.....	1,135
Payne.....	R. & A. R. R.....	266
Peake.....	C. & O. R. R.....	193
Peach Grove.....	U. S. C. & G. S.....	522
Peaked Mountain.....	U. S. C. & G. S.....	2,929
Peaks of Otter.....	Guyot.....	3,993
Do.....	U. S. C. & G. S.....	4,001
Do..... Flat Top.....	U. S. C. & G. S.....	3,875
Pemberton.....	R. & A. R. R.....	190
Pendleton.....	C. & O. R. R.....	472
Penola.....	R., F. & P. R. R.....	94
Peters.....	C. & O. R. R.....	1,175
Petersburgh, Depot of N. & W. & R. & P. R. R.....	City Engineer.....	9
Do..... Depot of P. R. R.....	City Engineer.....	70
Peters Mountain.....	U. S. C. & G. S.....	1,824
Plains.....	W. C., Va. M. & G. S. R. R.....	565
Pleasant Hill.....	Peters. R. R.....	119
Pleasant Valley.....	V. R. R.....	1,248
Pocahontas.....	R. & P. R. R.....	17
Do.....	N. & W. R. R.....	2,312
Pond Gap.....	C. & O. R. R.....	1,682
Port Republic.....	Shenandoah Valley R. R.....	1,096
Port Walthall.....	R. & P. R. R.....	87
Potomac Run.....	R., F. & P. R. R.....	85
Powhatan.....	P. A. L. R. R.....	320
Prospect.....	N. & W. R. R.....	575
Purcellville.....	W. & O. R. R.....	553
Quantico.....	B. & P. R. R.....	16
Ragged Mountain.....	U. S. C. & G. S.....	3,298
Rapid Anne.....	W. C., Va. M. & G. S. R. R.....	306
Rappahannock.....	W. C., Va. M. & G. S. R. R.....	275
Beam's.....	Peters R. R.....	162
Rectortown.....	W. C., Va. M. & G. S. R. R.....	444
Rein's Island, River Lock.....	J. R. & K. Canal.....	115
Reitsville.....	R. & D. R. R.....	831
Rice's.....	N. & W. R. R.....	396
Richland.....	R., F. & P. R. R.....	10
Richmond, depot of R., F. & P. R. R.....	City Engineer.....	181
Do..... R. & P. R. R.....	City Engineer.....	84
Do..... R. & A. R. R.....	City Engineer.....	83
Do..... R. & D. R. R.....	City Engineer.....	28
Do..... R., Y. R. & C. R. R.....	City Engineer.....	18
Do..... C. & O. R. R.....	City Engineer.....	28
Rileysville.....	Shenandoah Valley R. R.....	726
Ripplemead.....	N. & W. R. R.....	1,607
River.....	W. C., Va. M. & G. S. R. R.....	493
Riverside.....	Shenandoah Valley R. R.....	938
Riverton.....	Shenandoah Valley R. R.....	497
Riverville.....	R. & A. R. R.....	423
Roanoke.....	Shenandoah Valley R. R.....	907
Rock Castle.....	J. R. & K. Canal.....	177
Do.....	R. & A. R. R.....	175
Rolling Mills.....	R. & A. R. R.....	530
Romancoke.....	R., Y. R. & C. R. R.....	44
Rope Ferry.....	R. & A. R. R.....	668
Round Hill.....	W. & O. R. R.....	558

Station.	Authority.	Elevation.
		<i>Feet.</i>
Rural Retreat.....	A. M. & O. R. R.....	2,515
Rutherglen.....	R. F. & P. R. R.....	203
Sabbot Hill.....	J. R. & K. Canal.....	143
St. Asaph Junction.....	B. & P. R. R.....	45
Salem.....	W. C. Va. M. & G. S. R. R.....	633
Salisbury.....	R. & A. R. R.....	894
Salt peter Cave.....	R. & A. R. R.....	892
Saltville.....	N. & W. R. R.....	1,724
Scottsburg.....	P. A. L. R. R.....	342
Scottsville.....	R. & A. R. R.....	275
Seven Mile Ford.....	N. & W. R. R.....	1,988
Shadwell.....	W. C., Va. M. & G. S. R. R.....	303
Shenandoah Iron Works.....	Shenandoah Valley R. R.....	940
Do.....R. (Snicker's).....	W. & O. R. R.....	360
Sherando.....	Shenandoah Valley R. R.....	1,380
Smith Lock.....	R. & A. R. R.....	516
Smith Mountain.....	U. S. C. & G. S.....	2,043
Snickersville.....	W. & O. R. R.....	680
South Anna Depot.....	C. & O. R. R.....	70
South Branch Mountain.....	W. & O. R. R.....	2,148
South River.....	R. & A. R. R.....	850
Spear Mountain.....	U. S. C. & G. S.....	1,616
Spout Spring.....	N. & W. R. R.....	848
Springfield.....	W. C., Va. M. & G. S. R. R.....	240
Staples Mills.....	J. R. & K. Canal.....	455
Stapleton.....	R. & A. R. R.....	447
Staunton.....	C. & O. R. R.....	1,387
Do.....	V. R. R.....	1,379
Staytide.....	N. & W. R. R.....	1,640
Steel.....	C. & O. R. R.....	1,209
Stephenson's.....	V. R. R.....	499
Stony Creek.....	P. R. R.....	74
Strasburg.....	W. C., Va. M. & G. S. R. R.....	637
Do.....Junction.....	W. C., Va. M. & G. S. R. R.....	694
Stuart Draft.....	Shenandoah Valley R. R.....	1,388
Suffolk.....	N. & W. R. R.....	58
Sugarloaf Mountain.....	U. S. C. & G. S.....	2,292
Sweet Hall.....	R., Y. R. & C. R. R.....	40
Swoope.....	C. & O. R. R.....	1,650
Sycamore.....	W. C., Va. M. & G. S. R. R.....	733
Do.....	C. & O. R. R.....	160
Taylorville.....	R., F. & P. R. R.....	119
Telegraph Road.....	B. & P. R. R.....	82
Temples.....	R. & P. R. R.....	88
Thaxtons.....	N. & W. R. R.....	962
Thompson.....	Shenandoah Valley R. R.....	790
Thoroughfare.....	W. C., Va. M. & G. S. R. R.....	399
Timberville.....	V. R. R.....	1,018
Tinker Creek.....	Shenandoah Valley R. R.....	961
Tobacco Row Mountain.....	U. S. C. & G. S.....	2,938
Tolersville.....	C. & O. R. R.....	463
Tomahawk.....	P. A. L. R. R.....	257
Tonis Brook.....	V. R. R.....	745
Trevilian.....	C. & O. R. R.....	523
Trice.....	C. & O. R. R.....	1,816
Troutdale.....	Shenandoah Valley R. R.....	1,400
Tuckahoe.....	J. R. & K. Canal.....	143
Tunstalls.....	R., Y. R. & C. R. R.....	60
Una.....	C. & O. R. R.....	1,420
Unionville.....	F., O. & C. R. R.....	500
Variety Springs.....	C. & O. R. R.....	1,905
Verdiersville.....	F., O. & C. R. R.....	514
Verdon.....	C. & O. R. R.....	220
Verona.....	V. R. R.....	1,272

Station.	Authority.	Elevation.
		<i>Feet.</i>
Vesuvius	Shenandoah Valley R. R.	1,420
Vienna	W. & O. R. R.	395
View Tree Mountain	U. S. C. & G. S.	1,087
Vinita	R. & A. R. R.	142
Virgin's Mills	J. R. & K. C. R. R.	251
Wadesville	V. R. R.	495
Wakefield	N. & W. R. R.	100
Walker Ford	R. & A. R. R.	431
Ward's Springs	W. C., Va. M. & G. S. R. R.	797
Warminster	R. & A. R. R.	332
Warren	R. & A. R. R.	299
Warrenton Junction	W. C., Va. M. & G. S. R. R.	265
Water Lick	W. C., Va. M. & G. S. R. R.	550
Waterloo	B. & P. R. R.	50
Waverly	N. & W. R. R.	114
Waynesborough	C. & O. R. R.	1,302
Do	Shenandoah Valley R. R.	1,298
Weldon	Peters. R. R.	105
Wellville	N. & W. R. R.	420
Wenonah	N. & W. R. R.	1,559
Westham	R. & A. R. R.	116
West Point	R., Y. R. & C. R. R.	9
Westview	R. & A. R. R.	183
Weyers Cave	Shenandoah Valley R. R.	1,123
White House	R., Y. R. & C. R. R.	18
White Post	Shenandoah Valley R. R.	610
White Top	Guyot	5,530
Whittle's	W. C., Va. M. & G. S. R. R.	812
Wickham	C. & O. R. R.	75
Williamsons	C. & O. R. R.	1,063
Willis Mountain	U. S. C. & G. S.	1,159
Wilson's	N. & W. R. R.	367
Wilton	R. & A. R. R.	996
Winchester	V. R. R.	717
Windsor	N. & W. R. R.	84
Wingina	R. & A. R. R.	350
Woel	C. & O. R. R.	257
Wolf Trap	P. A. C. R. R.	349
Wood Bridge	B. & P. R. R.	73
Woodford	R., F. & P. R. R.	125
Woodstock	V. R. R.	520
Wytheville	N. & W. R. R.	2,242
Zuni	N. & W. R. R.	23

Station.	Authority.	Elevation.
		<i>Feet.</i>
Rural Retreat.....	A., M. & O. R. R.	2,515
Rutherglen.....	R., F. & P. R. R.	203
Sabbot Hill.....	J. R. & K. Canal	143
St. Asaph Junction.....	B. & P. R. R.	45
Salem.....	W. C. Va. M. & G. S. R. R.	633
Salisbury.....	R. & A. R. R.	894
Salt peter Cave.....	R. & A. R. R.	892
Saltville.....	N. & W. R. R.	1,724
Scottsburg.....	P. A. L. R. R.	342
Scottsville.....	R. & A. R. R.	275
Seven Mile Ford.....	N. & W. R. R.	1,958
Shadwell.....	W. C., Va. M. & G. S. R. R.	303
Shenandoah Iron Works.....	Shenandoah Valley R. R.	940
Do.....R. (Snicker's).....	W. & O. R. R.	360
Sherando.....	Shenandoah Valley R. R.	1,380
Smith Lock.....	R. & A. R. R.	516
Smith Mountain.....	U. S. C. & G. S.	2,043
Snickersville.....	W. & O. R. R.	680
South Anna Depot.....	C. & O. R. R.	70
South Branch Mountain.....	W. & O. R. R.	2,148
South River.....	R. & A. R. R.	850
Spear Mountain.....	U. S. C. & G. S.	1,616
Spout Spring.....	N. & W. R. R.	848
Springfield.....	W. C., Va. M. & G. S. R. R.	240
Staples Mills.....	J. R. & K. Canal	455
Stapleton.....	R. & A. R. R.	447
Staunton.....	C. & O. R. R.	1,387
Do.....	V. R. R.	1,379
Staytide.....	N. & W. R. R.	1,640
Steel.....	C. & O. R. R.	1,209
Stephenson's.....	V. R. R.	499
Stony Creek.....	P. R. R.	74
Strasburg.....	W. C., Va. M. & G. S. R. R.	637
Do.....Junction.....	W. C., Va. M. & G. S. R. R.	694
Stuart Draft.....	Shenandoah Valley R. R.	1,388
Suffolk.....	N. & W. R. R.	58
Sugarloaf Mountain.....	U. S. C. & G. S.	2,292
Sweet Hall.....	R., Y. R. & C. R. R.	40
Swoope.....	C. & O. R. R.	1,650
Sycamore.....	W. C., Va. M. & G. S. R. R.	733
Do.....	C. & O. R. R.	160
Taylorsville.....	R., F. & P. R. R.	119
Telegraph Road.....	B. & P. R. R.	82
Temples.....	R. & P. R. R.	88
Thaxtons.....	N. & W. R. R.	962
Thompson.....	Shenandoah Valley R. R.	790
Thoroughfare.....	W. C., Va. M. & G. S. R. R.	399
Timberville.....	V. R. R.	1,018
Tinker Creek.....	Shenandoah Valley R. R.	961
Tobacco Row Mountain.....	U. S. C. & G. S.	2,938
Tolersville.....	C. & O. R. R.	463
Tomahawk.....	P. A. L. R. R.	257
Tonis Brook.....	V. R. R.	745
Trevilian.....	C. & O. R. R.	523
Trice.....	C. & O. R. R.	1,816
Troutdale.....	Shenandoah Valley R. R.	1,400
Tuckahoe.....	J. R. & K. Canal	143
Tunstalls.....	R., Y. R. & C. R. R.	60
Una.....	C. & O. R. R.	1,420
Unionville.....	F., O. & C. R. R.	500
Variety Springs.....	C. & O. R. R.	1,905
Verdierville.....	F., O. & C. R. R.	514
Verdon.....	C. & O. R. R.	220
Verona.....	V. R. R.	1,272

Station.	Authority.	Elevation.
		<i>Feet.</i>
Vesuvius	Shenandoah Valley R. R.	1,420
Vienna	W. & O. R. R.	395
View Tree Mountain	U. S. C. & G. S.	1,067
Vinita	R. & A. R. R.	142
Virgin's Mills	J. R. & K. C. R. R.	251
Wadesville	V. R. R.	495
Wakefield	N. & W. R. R.	100
Walker Ford	R. & A. R. R.	431
Ward's Springs	W. C., Va. M. & G. S. R. R.	797
Warminster	R. & A. R. R.	332
Warren	R. & A. R. R.	299
Warrenton Junction	W. C., Va. M. & G. S. R. R.	265
Water Lick	W. C., Va. M. & G. S. R. R.	550
Waterloo	B. & P. R. R.	50
Waverly	N. & W. R. R.	114
Waynesborough	C. & O. R. R.	1,302
Do	Shenandoah Valley R. R.	1,298
Weldon	Peters. R. R.	105
Wellville	N. & W. R. R.	420
Wenonah	N. & W. R. R.	1,559
Westham	R. & A. R. R.	116
West Point	R., Y. R. & C. R. R.	9
Westview	R. & A. R. R.	183
Weyers Cave	Shenandoah Valley R. R.	1,123
White House	R., Y. R. & C. R. R.	18
White Post	Shenandoah Valley R. R.	610
White Top	Guyot	5,530
Whittle's	W. C., Va. M. & G. S. R. R.	812
Wickham	C. & O. R. R.	75
Williamsons	C. & O. R. R.	1,063
Willis Mountain	U. S. C. & G. S.	1,159
Wilson's	N. & W. R. R.	367
Wilton	R. & A. R. R.	996
Winchester	V. R. R.	717
Windsor	N. & W. R. R.	84
Wingina	R. & A. R. R.	350
Woel	C. & O. R. R.	257
Wolf Trap	P. A. C. R. R.	349
Wood Bridge	B. & P. R. R.	73
Woodford	R., F. & P. R. R.	125
Woodstock	V. R. R.	820
Wytheville	N. & W. R. R.	2,242
Zuni	N. & W. R. R.	28

WEST VIRGINIA.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Alden	C. & O. R. R.	666
Alderson	C. & O. R. R.	1,545
Barboursville	C. & O. R. R.	578
Barksdale	C. & O. R. R.	1,338
Bayard (Blackwater head).....	W. Va., C. & P. R. R.	3,150
Blacksburg	C. & O. R. R.	620
Blackwater, Beaver Fork	W. Va., C. & P. R. R.	3,080
Blaine	W. Va., C. & P. R. R.	1,829
Bluefield	N. & W. R. R.	2,552
Blue Sulphur Springs	C. & O. R. R.	508
Broad Tree Tunnel	B. & O. R. R.	1,104
Brownstown	C. & O. R. R.	608
Buffalo	C. & O. R. R.	1,109
Caldwell	C. & O. R. R.	1,766
Cameron	B. & O. R. R.	1,049
Do	Valley R. R.	547
Cannelton	C. & O. R. R.	638
Caperton	C. & O. R. R.	984
Carbon	B. & O. R. R.	667
Ceredo	C. & O. R. R.	545
Charleston	C. & O. R. R.	603
Charlestown	Shenandoah Valley R. R.	517
Cherry Run	B. & O. R. R.	398
Coalburgh	C. & O. R. R.	625
Cotton Hill	C. & O. R. R.	792
Cranberry Summit	B. & O. R. R.	2,551
Crescent	C. & O. R. R.	638
De Chantel, Mount	B. & O. R. R.	672
Dimmock	C. & O. R. R.	1,045
Dol Gully Tunnel	B. & O. R. R.	545
Dow	C. & O. R. R.	1,432
Edgington	P., C. & St. L. R. R.	704
Elk-Garden Mine	W. Va., C. & P. R. R.	2,300
Elm Grove	B. & O. R. R.	681
Elms	C. & O. R. R.	860
Fairfax Stone	W. Va., C. & P. R. R.	3,100
Fairmont	B. & O. R. R.	888
Falls Mills	N. & W. R. R.	2,325
Fayette	C. & O. R. R.	900
Fern Spring	C. & O. R. R.	914
Fort Spring	C. & O. R. R.	1,626
Frederick	C. & O. R. R.	640
Fridelphia	B. & O. R. R.	735
Gauley	C. & O. R. R.	707
Glovers Gap	B. & O. R. R.	1,150
Grafton, B. M. on top N. side of central pier B. & O. R. R. bridge over Taggart's Valley Cr.	U. S. C. & G. S.	997
Grafton	B. & O. R. R.	985
Graham	N. & W. R. R.	2,387
Greenbrier Stock Yards	C. & O. R. R.	1,530
Guyandotte	C. & O. R. R.	560
Halltown	Valley R. R.	339
Hampton	C. & O. R. R.	540
Harper's Ferry	B. & O. R. R.	272
Do	Valley R. R.	277
Hawks Nest	C. & O. R. R.	827
Hinton	C. & O. R. R.	137

Station.	Authority.	Elevation.
		<i>Feet.</i>
olliday Cove.....	P., C. & St. L. R. R.....	721
intington.....	C. & O. R. R.....	566
urricane.....	C. & O. R. R.....	6,837
gleside.....	N. & W. R. R.....	1,937
nction Switch.....	C. & O. R. R.....	560
nawha Falls.....	C. & O. R. R.....	669
arneysville.....	B. & O. R. R.....	589
wiston.....	C. & O. R. R.....	616
up Creek.....	C. & O. R. R.....	647
well's.....	C. & O. R. R.....	1,512
wmoor Junction.....	C. & O. R. R.....	1,155
tleton.....	B. & O. R. R.....	930
Kendree.....	C. & O. R. R.....	1,141
lden.....	C. & O. R. R.....	606
annington.....	B. & O. R. R.....	967
rtinsburgh.....	B. & O. R. R.....	435
sons Mills.....	C. & O. R. R.....	1,527
adow Creek.....	C. & O. R. R.....	1,265
lton.....	C. & O. R. R.....	586
hler Mills.....	C. & O. R. R.....	1,540
orefield.....	W. & O. R. R.....	806
rgantown, Signal Station.....	U. S. Signal Office.....	963
undsville.....	B. & O. R. R.....	640
unt Carbon.....	C. & O. R. R.....	639
wburgh.....	B. & O. R. R.....	1,215
w Richmond.....	C. & O. R. R.....	1,289
w River Falls.....	C. & O. R. R.....	1,290
Do..... Bridge.....	C. & O. R. R.....	827
rth Branch.....	B. & O. R. R.....	606
rth Mountain.....	B. & O. R. R.....	547
tallburgh.....	C. & O. R. R.....	946
a.....	C. & O. R. R.....	622
nt Creek.....	C. & O. R. R.....	622
ckersburgh, L. W. Ohio R.....	M. & C. R. R.....	574
Do..... H. W. Ohio R.....	M. & C. R. R.....	624
Do..... Bridge.....	M. & C. R. R.....	664
Do..... B. M. on S. front of water table of P. O. & C. H.....	U. S. C. & G. S.....	616
wpaw.....	C. & O. R. R.....	1,237
dmont.....	B. & O. R. R.....	925
nt Mills.....	B. & O. R. R.....	896
nce.....	C. & O. R. R.....	1,192
innimont.....	C. & O. R. R.....	11,965
son.....	Shenandoah Valley R. R.....	519
er View.....	C. & O. R. R.....	1,072
nceverte.....	C. & O. R. R.....	1,663
ey's Point.....	B. & O. R. R.....	829
wlesburg, B. M. on base of center pillar V. end B. & O. R. R. bridge over Cheat river.....	U. S. C. & G. S.....	1,402
nt Albans.....	C. & O. R. R.....	592
ton.....	C. & O. R. R.....	608
ry.....	C. & O. R. R.....	591
tt.....	C. & O. R. R.....	683
vall.....	C. & O. R. R.....	1,003
w.....	W. Va., C. & P. R. R.....	1,290
mandoah Junction.....	Shenandoah Valley R. R.....	515
spherdstown.....	Shenandoah Valley R. R.....	405
ing.....	C. & O. R. R.....	1,150
ing Hill.....	C. & O. R. R.....	597
eles.....	C. & O. R. R.....	1,210
ne Cliff.....	C. & O. R. R.....	1,076
nmit Point.....	Valley R. R.....	623
cott.....	C. & O. R. R.....	1,512

Station.	Authority.	Elevation.
		<i>Feet.</i>
Thorndyke.....	C. & O. R. R.....	640
Thornton.....	B. & O. R. R.....	1,038
Tuckahoe.....	C. & O. R. R.....	2,035
Tunnelton.....	B. & O. R. R.....	1,820
Welling Tunnel.....	B. & O. R. R.....	1,193
Wheeling.....	B. & O. R. R.....	637
Do... North and Water streets.....	B. & O. R. R.....	645
Do... Market Place.....	B. & O. R. R.....	662
White Sulphur Springs.....	C. & O. R. R.....	1,922
Winifrede Junction.....	C. & O. R. R.....	616

WISCONSIN.

Station.	Authority.	Elevation.
		<i>Feet.</i>
Abbotsford	Wis. Cent. R. R.	1,425
Ableman's	C. & N. W. R. R.	878
Amherst	Wis. Cent. R. R.	1,069
Do.. Junction .....	.....	1,171
Do.. crossing W. C. R. R.	G. B. & Minn. R. R.	1,130
Angelica	Mil. & N. R. R.	867
Aniwa	M., L. S. & W. R. R.	1,418
Appleton	M., L. S. & W. R. R.	715
Do.. Fox River .....	.....	718
Do.. Junction	M., L. S. & W. R. R.	801
Ashland	Wis. Cent. R. R.	678
Anbursdale	Wis. Cent. R. R.	1,217
Augusta	C. & N. W. R. R.	965
Baldwin	C. & N. W. R. R.	1,132
Baraboo	C. & N. W. R. R.	861
Barton	N. W. U. R. R.	910
Bear Creek	M., L. S. & W. R. R.	817
Beaver	Wis. Val. R. R.	963
Belgium	M., L. S. & W. R. R.	755
Beloit, crossing C. & N. W. & W. N. R. R.	C. & N. W. R. R.	740
Do, B. M. on foundation stone of water tank	C. & N. W. R. R.	741
Do, level of water in Rock River	C. & N. W. R. R.	729
Birnamwood	M., L. S. & W. R. R.	1,293
Black River Station	C. & N. W. R. R.	892
Blooms	C. & N. W. R. R.	881
Boyer's Bluff, Geodetic Station	U. S. Lake Survey	712
Branch	M., L. S. & W. R. R.	729
Bruce, Geodetic Station	U. S. Lake Survey	767
Buckbee	M., L. S. & W. R. R.	831
Buena Vista	Wis. Cent. R. R.	1,074
Butte De Morts Lake, surface	Mil. & N. R. R.	735
Caledonia, Geodetic Station	U. S. Lake Survey	791
Camp Douglas Junction, crossing C. & N. W. & M. & St. P. R. R.	C. & N. W. R. R.	929
Ca o	M., L. S. & W. R. R.	844
Cedarburgh	Mil. & N. R.	773
Cedar Grove	M., L. S. & W. R. R.	697
Centralia	Wis. Val. R. R.	1,015
Centreville	M., L. S. & W. R. R.	637
Chilton	Mil. & N. R. R.	851
Clayton	M., L. S. & W. R. R.	1,347
Clintonville	M., L. S. & W. R. R.	824
Colby	Wis. Cent. R. R.	1,315
Coloma	Wis. Cent. R. R.	1,042
Dane	C. & N. W. R. R.	1,058
Davidson's Farm	Mil. & N. R. R.	747
Day's Mill	Mil. & N. R. R.	720
Deckers	M., L. S. & W. R. R.	756
Delafield, Geodetic Station	U. S. Lake Survey	1,242
De Pere	Mil. & N. R. R.	591
Dexter ville	G. B. & Minn. R. R.	1,001
Dillman's	M., L. S. & W. R. R.	668
Dorchester	Wis. Cent. R. R.	1,466
Dover, Geodetic Station	U. S. Lake Survey	861
Dresbach, low water	U. S. Engr. Corps	623
Dundas	M., L. S. & W. R. R.	832
Eau Claire	C. & N. W. R. R.	836

Station.	Authority.	Elevation.
		<i>Feet.</i>
Eden	N. W. U. R. R.	1,019
Eland Junction	M., L. S. & W. R. R.	1,244
Elkhart Lake	Mil. & N. R. R.	944
Elk Mound	C. & N. W. R. R.	926
Elroy	C. & N. W. R. R.	955
Erin, Geodetic Station	U. S. Lake Survey	1,358
Evansville, B. M. on foundation stone of water tank	C. & N. R. R.	893
Fairchild	C. & N. R. R.	1,066
Fall Creek Station	C. & N. W. R. R.	929
Fifield	Wis. Cent. R. R.	1,458
Fond du Lac	N. W. U. R. R.	769
Footville, B. M. on foundation stone of water tank	C. & N. W. R. R.	816
Forest Junction	M., L. S. & W. R. R.	830
Fort Howard	Mil. & N. R. R.	588
Fountain City, low water	U. S. Engr. Corps	637
Fredonia	Mil. & N. R. R.	788
Goodhope	Mil. & N. R. R.	694
Grafton	Mil. & N. R. R.	752
Grand Rapids	G. B. & Minn. R. R.	1,024
Granville	N. W. U. R. R.	738
Green Bay	Mil. & N. R. R.	588
Do....surface of Fox River	Mil. & N. R. R.	582
Greenville	M., L. S. & W. R. R.	812
Grimins	M., L. S. & W. R. R.	845
Hammond	C. & N. W. R. R.	1,100
Hancock	Wis. Cent. R. R.	1,102
Hanover, cross. C. & N. W. R. R. & Monroe Br. of M. & St. P. R. R.	C. & N. W. R. R.	780
Hartland	Mil. & N. R. R.	839
Hayton	Mil. & N. R. R.	822
Herr Cassel	N. W. U. R. R.	1,049
Hersey	C. & N. W. R. R.	1,168
Horicon, Geodetic Station	U. S. Lake Survey	1,118
Horicon Lake	Toner	868
Hortonville	M., L. S. & W. R. R.	808
Do....Junction	M., L. S. & W. R. R.	789
Hudson	C. & N. W. R. R.	700
Humbird	C. & N. W. R. R.	1,018
Hunting	M., L. S. & W. R. R.	940
Jackson	N. W. U. R. R.	897
Junction City	Wis. Cent. R. R.	1,145
Kaukauna	M., L. S. & W. R. R.	655
Kelleys	M., L. S. W. R. R.	1,245
Kewaskum	N. W. U. R. R.	959
Kiel	Mil. & N. R. R.	915
Knapp	C. & N. W. R. R.	919
Knowlton	Wis. Val. R. R.	1,131
La Crosse, L. W. Do....C. M. & St. P. R. R. depot	U. S. Engr. Corps	626
Do....Signal Station	City Engineer	698
Do....Signal Station	U. S. Signal Office	708
Lake Shore Junction	M., L. S. & W. R. R.	642
Lavalle	C. & N. W. R. R.	897
Lebanon, Geodetic Station	U. S. Lake Survey	1,019
Lindivern	N. W. U. R. R.	638
Lisbon, Geodetic Station	U. S. Lake Survey	1,054
Little Chute	M., L. S. & W. R. R.	707
Lodi	C. & N. W. R. R.	848
Lowries	C. & N. W. R. R.	959
Madison, cross. C. & N. W. & P. du C. R. R. Do....Signal Station	C. & N. W. R. R.	848
Do....Signal Station	U. S. Signal Office	949
Manitowoc	M., L. S. & W. R. R.	593
Do....A. & N. L. R. R.	Mil. & N. R. R.	832

Station.	Authority.	Elevation.
		<i>Feet.</i>
dannville.....	Wis. Cent. R. R.....	1,292
darien.....	M., L. S. & W. R. R.....	860
darshfield.....	Wis. Cent. R. R.....	1,289
darshland, crossing of G. B. & M. R. R.....	C. & N. W. R. R.....	659
dedford.....	Wis. Cent. R. R.....	1,413
dedina.....	M., L. S. & W. R. R.....	813
denasha.....	Wis. Cent. R. R.....	756
Do..... Junction.....	Mil. & N. R. R.....	832
denomonee.....	C. & N. W. R. R.....	878
derillon.....	C. & N. W. R. R.....	934
derrimac.....	C. & N. W. R. R.....	796
derchigan, Lake.....	Mil. & N. R. R.....	582
dergnon.....	M., L. S. & W. R. R.....	673
derladore.....	Wis. Cent. R. R.....	1,197
derlston.....	C. & N. W. R. R.....	915
derwaukee, depot L. S. & M. S. R. R.....	City Engineer.....	592
Do..... Union Depot.....	City Engineer.....	584
Do..... Signal Station.....	U. S. Signal Office.....	697
Do..... Court-House, Geodetic Station.....	U. S. Lake Survey.....	838
deruerva.....	G. B. & Minn. R. R.....	832
dernesota Junction, Geodetic Station.....	U. S. Lake Survey.....	992
deronroe's Farm.....	Mil. & N. R. R.....	669
derosel.....	M., L. S. & W. R. R.....	639
deragowicka.....	Toner.....	882
deramahbin, Lake.....	Toner.....	867
derew Berlin, Geodetic Station.....	U. S. Lake Survey.....	1,073
derew Holstein.....	Mil. & N. R. R.....	933
derew London.....	M., L. S. & W. R. R.....	756
derewton.....	M., L. S. & W. R. R.....	657
derorris.....	M., L. S. & W. R. R.....	1,298
derorthport.....	G. B. & Minn. R. R.....	777
derorwalk.....	C. & N. W. R. R.....	1,020
derosfield, Geodetic Station.....	U. S. Lake Survey.....	1,168
deroonomowoc, Lake.....	Toner.....	860
derogensburgh.....	G. B. & M. R. R.....	865
derogenia.....	Wis. Cent. R. R.....	1,565
derregon Station, B. M. on S. W. cor. of abutment of bridge over highway, S. of.....	C. & N. W. R. R.....	952
deroshkosh.....	M., L. S. & W. R. R.....	753
derosburg.....	M., L. S. & W. R. R.....	696
derosackwaukee.....	Wis. Cent. R. R.....	784
derosnokee.....	Wis. Cent. R. R.....	1,285
deroswaukee, Lake.....	Toner.....	1,891
deroshillips.....	Wis. Cent. R. R.....	1,454
deroslainfield.....	Wis. Cent. R. R.....	1,113
deroslover.....	Wis. Cent. R. R.....	1,078
deroslymouth.....	Mil. & N. R. R.....	844
derosortage.....	Wis. Cent. R. R.....	792
derosort Edwards.....	Wis. Val. R. R.....	972
derosort Washington.....	M., L. S. & W. R. R.....	669
derosrattville.....	M., L. S. & W. R. R.....	777
derosrescott, low water.....	U. S. Eng'r. Corps.....	664
derosrandom Lake.....	Mil. & N. R. R.....	877
derosredsburg.....	C. & N. W. R. R.....	877
derosroberts.....	C. & N. W. R. R.....	1,036
derosrockfield.....	N. W. U. R. R.....	890
derosrockland.....	Mil. & N. R. R.....	643
derosroyalton.....	G., B. & Minn. R. R.....	822
derosrudo.....	C. & N. W. R. R.....	974
derosrudolph.....	Wis. Val. R. R.....	1,146
derosrudville.....	M., L. S. & W. R. R.....	822
derosrusk.....	C. & N. W. R. R.....	901
derosaint Catherine.....	N. W. U. R. R.....	765
derosrunkville.....	Mil. & N. R. R.....	763

Station.	Authority.	Elevation.
		<i>Feet.</i>
Scandinavia	G., B. & Minn. R. R.	935
Schwartzburgh, junct. M. & St. P. R. R.	Mil. & N. R. R.	648
Scranton	G., B. & Minn. R. R.	962
Shawano	Mil. & N. R. R.	819
Shawano Lake	Mil. & N. R. R.	803
Sheboygan	M., L. S. & W. R. R.	588
Sheridan	Wis. Cent. R. R.	1,017
Sherwood	Mil. & N. R. R.	835
Silver Springs	N. W. U. R. R.	649
Somers, Geodetic Station	U. S. Lake Survey	764
Sparta	C. & N. W. R. R.	786
Spencer	Wis. Cent. R. R.	1,307
Split Rock	M., L. S. & W. R. R.	971
Springvale, Geodetic Station	U. S. Lake Survey	1,044
Stetsonville	Wis. Cent. R. R.	1,462
Steven's Point	Wis. Cent. R. R.	1,090
Sugar Bush	M., L. S. & W. R. R.	827
Tigerton	M., L. S. & W. R. R.	1,032
Tomah	Wis. Val. R. R.	967
Trempealeau, low water	U. S. Eng'r. Corps	630
Tunnel	C. & N. W. R. R.	1,071
Two Rivers	M., L. S. & W. R. R.	586
Ulao	M., L. S. & W. R. R.	697
Unity	Wis. Cent. R. R.	1,333
Upper Saint Croix Lake	Petermann	956
Valley Junction	Wis. Val. R. R.	934
Waldo	Mil. & N. R. R.	836
Wampum, Geodetic Station	U. S. Lake Survey	940
Warren's	C. & N. W. R. R.	1,019
Waterford, Geodetic Station	U. S. Lake Survey	949
Wauhechem, Summit	Mil. & N. R. R.	884
Waunakee	C. & N. W. R. R.	922
Waupaca	Wis. Cent. R. R.	899
Wausau	M., L. S. & W. R. R.	1,182
Do	Wis. Val. R. R.	1,227
Weeden's	M., L. S. & W. R. R.	700
West Bend	N. W. U. R. R.	906
Westborough	Wis. Cent. R. R.	1,489
West Eau Claire	C. & N. W. R. R.	877
Westfield	Wis. Cent. R. R.	860
West Greenville	M., L. S. & W. R. R.	892
Weston	M., L. S. & W. R. R.	1,231
Weyauwega	Wis. Cent. R. R.	823
Whitcomb	M., L. S. & W. R. R.	1,130
Whitefish Bay	M., L. S. & W. R. R.	654
Whittenberg	M., L. S. & W. R. R.	1,177
Whittlesey	Wis. Cent. R. R.	1,530
Wilson	C. & N. W. R. R.	1,147
Wilton	C. & N. W. R. R.	986
Winnebago, Lake	Mil. & N. R. R.	744
Winona Junction, M. & St. P. R. R. cross	C. & N. W. R. R.	655
Wisconsin Central Junction	M., L. S. & W. R. R.	755
Wisconsin Valley Junction	C. & N. W. R. R.	925
Woodland, Geodetic Station	U. S. Lake Survey	1,159
Worcester	Wis. Cent. R. R.	1,605
Wright's	C. & N. W. R. R.	900

WYOMING.

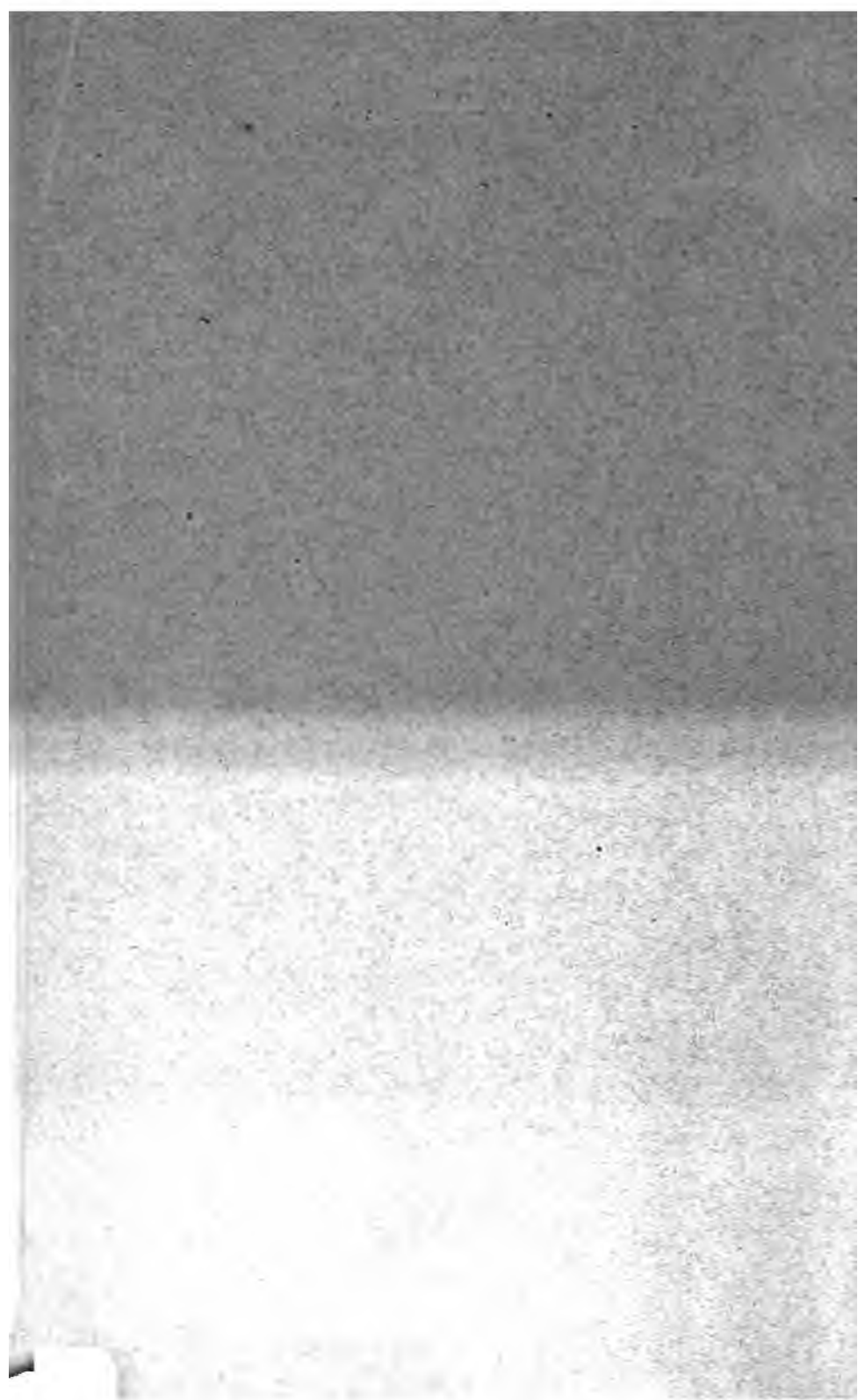
Station.	Authority.	Elevation.
		<i>Feet.</i>
Amethyst Mountain, Yellowstone National Park.....	Hayden	9,423
Arrow Peak	King	8,683
Aspen	U. P. R. R	7,405
Atlantic City	Hayden	7,850
Atlantic Peak	Hayden	12,794
Aurora	U. P. R. R	6,719
Baird, Mount	Hayden	9,990
Bald Mountain	Jones	9,897
Do.....Wind River Range, timber-line on		10,760
Baronette's Bridge, Yellowstone National Park	Hayden	5,978
Baronette's Peak, Yellowstone National Park	Hayden	10,459
Barrel Spring	Toner	6,854
Bastion Mountain	King	6,991
Battle Mountain	King	8,991
Baxter	Toner	6,300
Beaver Lake, Yellowstone National Park	Hayden	7,415
Bellevue Peak	King	9,820
Benlah Lake, Yellowstone National Park	Hayden	7,530
Big Horn Mountains	Raynolds	8,000
Big Pond Stage Station	Toner	12,000
Bison Peak, Yellowstone National Park	Hayden	6,541
Bitter Creek	U. P. R. R	9,038
Bitter Creek	U. P. R. R	6,705
Black Butte	Hayden	8,170
Do	King	8,176
Boleter	Toner	4,325
Bradley's Peak	Hayden	9,500
Bridger	U. P. R. R	6,637
Bridger, Fort		6,753
Do	Med. Dept., U. S. A	6,656
Bridger's Pass	U. P. R. R. Surveys	11,410
Brown, Camp	Jones	5,498
Do.....(old)	Jones	5,447
Brown's Park	Powell	5,409
Bryan	U. P. R. R	6,196
Buford	U. P. R. R	7,785
Bunsen Peak, Yellowstone National Park	Hayden	8,775
Carbon	U. P. R. R	6,830
Castletown	Pre. R. R. Levels	4,989
Central Peak	King	8,774
Chauvenet, Mount	Hayden	13,000
Cheyenne	U. P. R. R	6,059
Do ..Signal Office	U. S. Signal Office	6,089
Cheyenne Pass	King	8,791
Do	U. P. R. R. Surveys	8,650
Chimney Peak	King	8,188
Chimney Rock	Jones	11,853
Chittenden, Mount, Yellowstone National Park	Hayden	10,190
Do	Jones	10,027
Church Buttes	U. P. R. R	6,368
Coffin Mountain	Hayden	11,376
Colorado Junction	U. P. R. R	6,314
Cooper's Lake	U. P. R. R	7,078

Station.	Authority.	Eleva
Crater Hills, Yellowstone National Park ..	Hayden	
Creston	U. P. R. R	
Deer Creek Agency	Smithsonian Inst	
Deer Mountain	King	
Delham Peak	King	1
Devil's Gate	Petermann	
Doane, Mount, Yellowstone National Park ..	Hayden	1
Dunraven Peak, Yellowstone National Park ..	Hayden	
Edson	U. P. R. R	
Elephant's Back, Yellowstone National Park ..	Hayden	
Elk Mountain	King	1
Encampment Meadows	King	
Essex Mountain	Hayden	
Evans Pass	U. P. R. R. Surveys	
Evanston	Hayden	
Do	U. P. R. R	
Evarts, Mount, Yellowstone National Park ..	Hayden	
Fetterman, Fort	Petermann	
Do	Toner	
Flaming Gorge	Powell	
Flat Mountain, Yellowstone National Park ..	Hayden	
Fremont's Peak	Fremont	1
Do	Hayden	1
Gardner's River Springs, Yellowstone National Park ..	Hayden	} to
Garnet Hill, Yellowstone National Park ..	Hayden	
Genie, Mount	Hayden	1
Geyser Basin, Lower, Yellowstone National Park ..	Hayden	
Geyser Basin, Upper, Yellowstone National Park ..	Hayden	
Gibbon Geyser Basin, Yellowstone National Park ..	Hayden	
Gibbon Lake, Yellowstone National Park ..	Hayden	
Gilbert's Trading Post	Smithsonian Inst	
Grand Encampment Mountain	King	1
Grand Téton	Hayden	1
Granger	U. P. R. R	
Granite Cañon	U. P. R. R	
Green River	U. P. R. R	
Do	Astronomical Station	
Grizzly Mountain, Yellowstone National Park ..	Hayden	
Gros Ventre Peak	Hayden	1
Halleck, Fort	Toner	
Hallville	Toner	
Hampton	Toner	
Hancock, Mount	Hayden	1
Hayden, Mount (Grand Téton)	Hayden	1
Do	timber line on	1
Haystack Mountain, Yellowstone National Park ..	King	
Heart Lake, Yellowstone National Park ..	Hayden	
Hell Roaring Mountain, Yellowstone National Park ..	Hayden	
Herring Lake, Yellowstone National Park ..	Hayden	
Hill City	Pre. R. R. Levels	
Hilliard	U. P. R. R	
Hoback Peak	Hayden	1
Holmes, Mount, Yellowstone National Park ..	Hayden	1
Hooker, Mount	Hayden	1
Howell	Toner	
Independence Rock	Petermann	
Index Peak	Hayden	1

Station.	Authority.	Elevation.
		<i>Feet.</i>
Inyan Kara	Jenney	6,700
Do	Petermann	6,600
Iron Mountain	King	6,908
Jackson's Hole	Raynolds	6,000
Langford, Mount, Yellowstone National Park	Hayden	10,779
Laramie	U. P. R. R.	7,158
Do	Wheeler	7,123
Do. Fort	Med. Dept., U. S. A.	4,519
Do. do	Petermann	4,470
Do. do. Flag staff	Pre. R. R. Levels	4,274
Laramie Peak	L. O. Report, 1872	11,000
Do	Petermann	10,000
Laramie Plains	(mean)	7,000
Laramie Range	L. O. Report, 1872	7,000
Latham	Toner	6,900
Lawrence	Toner	6,200
Leidy, Mount	Hayden	11,177
Lewis, Lake, Yellowstone National Park	Hayden	7,800
Lookout	U. P. R. R.	7,177
McDougal's Gap	Hayden	8,343
McDougal's Pass	Hayden	9,300
Madison Lake, Yellowstone National Park	Hayden	8,300
Mammoth Hot Springs, at Cabins, Yellowstone National Park	Hayden	6,387
Marston	Toner	6,245
Mary's Lake, Yellowstone National Park	Hayden	8,336
Medicine Bow	U. P. R. R.	6,571
Medicine Bow Mountains	L. O. Report, 1872	8,000
Medicine Butte (Pill Hill)	Hayden	8,769
Medicine Peak	King	12,231
Miller .....	.....	5,908
Millis	Toner	6,790
Mill Peak	King	10,506
Miner's Delight	Hayden	8,419
Moran, Mount	Hayden	12,800
Mountain City	Pre. R. R. Levels	3,589
Muddy Mountains	King	8,012
Mud Geysers on Yellowstone River, Yellowstone National Park	Hayden	7,725
Do	Ludlow	7,626
Norris, Mount, Yellowstone National Park	Hayden	10,019
North Twin Butte, Lower Basin, Yellowstone National Park	Hayden	7,976
Owl Creek Pass	Jones	7,836
Pacific Springs	Toner	7,144
Pelican Hill, Yellowstone National Park	Hayden	9,580
Percy	U. P. R. R.	6,971
Peashen's Store	King	6,500
Phil. Kearney, Fort	Med. Dept., U. S. A.	6,000
Phlox Mountain	Jones	9,136
Piedmont	U. P. R. R.	7,082
Pierre's Hole	Raynolds	6,400
Pilot Butte	Hayden	7,900
Pine Bluffs	King	8,878
Do	U. P. R. R.	5,047
Piney, Fort	Lander	7,580
Point of Rocks	Lander	6,517
Promontory Top, Yellowstone National Park	Hayden	8,706
Quasrant Mountain, Yellowstone National Park	Hayden	10,127
Quaking Aspen Mountain	King	8,688

Station.	Authority.	Elevation.
		<i>Feet.</i>
Quien Hornet Mountain	King	9,300
Raw Hide Peak	Petermann	6,370
Rawlins	U. P. R. R.	6,753
Red Buttes	U. P. R. R.	7,309
Red Desert	U. P. R. R.	6,722
Red Mountain, Yellowstone National Park	Hayden	9,777
Red Rock Pass	Hayden	7,271
Reed's Pass	U. P. R. R. Surveys	5,850
Riddle Lake, Yellowstone National Park	Hayden	8,000
River Butte	King	7,872
Rock Creek	U. P. R. R.	6,713
Rock Mountain	King	6,885
Rock Springs	U. P. R. R.	6,270
Russell, Fort	Pre. R. R. Levels	6,159
Do. (flag-staff)	Wheeler	6,041
Sailor Mountain	Jones	10,046
Do. Timber-line on	Jones	9,746
Saint Mary's Peak	King	7,722
Saint Vrain's Pass	Petermann	8,000
Salt Wells	U. P. R. R.	6,381
Sanders, Fort	U. P. R. R.	7,169
Do. (flag-staff)	Wheeler, R. R. Levels	7,168
Sander's Peak	King	9,077
Seminole Peak	Hayden	9,930
Separation	U. P. R. R.	6,677
Separation Peak	Hayden	8,500
Sheep Butte	King	9,722
Sheridan, Mount, Yellowstone National Park	Hayden	10,385
Do.	Jones	10,150
Sherman	U. P. R. R.	8,256
Shoshone Geyser Basin, Yellowstone National Park	Hayden	7,837
Shoshone Lake, Yellowstone National Park	Hayden	7,830
Sidney, Fort (flag-staff)	Wheeler	4,106
Smoothface Mountain (north), Yellowstone National Park	Hayden	10,500
Do. (south), Yellowstone National Park	Hayden	10,417
Soda Hill, Yellowstone National Park	Hayden	9,518
South Pass	Hayden	7,526
Do.	P. R. R. Reports	7,490
Do.	U. P. R. R. Surveys	7,470
South Pass City	Hayden	7,873
Do.	Petermann	7,857
South Twin Butte, Lower Geyser Basin, Yellowstone National Park	Hayden	7,977
Spearfish City	Pre. R. R. Levels	3,739
Specimen Ridge (top), Yellowstone National Park	Hayden	8,806
Split Mountain	Hayden	8,260
Stambaugh, Camp	Hayden	8,012
Do.	Jones	7,767
Steel, Fort (flag-staff)	Wheeler	6,850
Do.	U. P. R. R.	6,515
Steel, Mount	Hayden	7,770
Do.	King	7,771
Stevenson, Mount, Yellowstone National Park	Hayden	10,420
Sulphur Springs, near Bridger's Pass	Hayden	7,008
Sweetwater Bridge	Smithsonian Inst	7,000
Sybelles Pass	U. P. R. R. Surveys	7,020
Table Mountain	Hayden	7,728
Table Rock	King	7,551

Station.	Authority.	Elevation.
		<i>Feet.</i>
ak	Hayden	13,249
.....	Hayden	8,464
's Pass	Hayden	8,686
ings (of Sweetwater)	Petermann	6,134
.....	U. P. R. R.	7,899
e Pass	Hayden	9,852
.....	Jones	9,621
ountain, Yellowstone National		
.....	Hayden	11,142
ss	Hayden	7,063
k	Hayden	11,593
peak	Hayden	10,044
'one	Hayden	10,583
spring	King	6,927
.....	.....	6,800
.....	U. P. R. R.	6,716
e Mountain	King	7,984
e Needle	Hayden	12,000
.....	Jones	12,253
Needle, Timber-line on .....	.....	10,683
e, Mount, Yellowstone National		
Park	Hayden	10,346
.....do	Jones	10,106
.....do.. Timber-line on, Yel-		
lowstone National		
Park	Hayden	9,900
ntic Peak	Hayden	12,634
'eak	Hayden	9,273
ion	Hayden	9,866
.....	Toner	7,033
er Mountains, Timber-line on .....	.....	10,160
er Peak	Hayden	13,499
.....	U. P. R. R.	7,086
Peak	Hayden	11,490
tte	Hayden	8,456
ie Lake, Yellowstone National		
.....	Hayden	7,738
.....	Jones	7,564
ak	L. O. Report, 1872	9,000
ak	Hayden	11,700



ADVERTISEMENT.

(Bulletin 6.)

The publications of the United States Geological Survey are issued in accordance with the statute, approved March 3, 1879, which declares that—

“The publications of the Geological Survey shall consist of the annual report of operations, geological and economic maps illustrating the resources and classifications of the lands, and reports upon general and economic geology and paleontology. The annual report of operations of the Geological Survey shall accompany the annual report of the Secretary of the Interior. All special memoirs and reports of said Survey shall be issued in uniform quarto series if deemed necessary by the Director, but otherwise in ordinary octavos. Three thousand copies of each shall be published for scientific exchanges and for sale at the price of publication; and all literary and cartographic materials received in exchange shall be the property of the United States and form a part of the library of the organization. And the money resulting from the sale of such publications shall be covered into the Treasury of the United States.”

ANNUAL REPORTS.

From the above it will be seen that only the Annual Reports, which form parts of the reports of the Secretary of the Interior and are printed as executive documents, are available for gratuitous distribution. A number of these are furnished the Survey for its exchange list, but the bulk of them are supplied directly, through the document rooms of Congress, to members of the Senate and House. Except, therefore, in those cases in which an extra number is supplied to this office by special resolution, application must be made to members of Congress for the Annual Reports, as for all other executive documents.

Of these Annuals there have been already published:

I. First Annual Report to the Hon. Carl Schurz, by Clarence King. 1880. 8°. 79 pp. 1 map.—A preliminary report describing plan of organization and publications.

II. Report of the Director of the United States Geological Survey for 1880-'81, by J. W. Powell. 1882. 8°. lv, 588 pp. 61 pl. 1 map.

III. Third Annual Report of the United States Geological Survey, 1881-'82, by J. W. Powell. 1883. 8°. xviii, 564 pp. 67 pl. and maps.

IV. Fourth Annual Report of the United States Geological Survey, 1882-'83, by J. W. Powell. 1884. 8°. xii, 478 pp. 85 pl. and maps.

No copies of the Fourth Annual have as yet been ordered by Congress for distribution by the Geological Survey.

MONOGRAPHS.

The Monographs of the Survey are printed for the Survey alone, and can be distributed by it only through a fair exchange for books needed in its library, or through the sale of those copies over and above the number needed for such exchange. They are not for gratuitous distribution.

So far as already determined upon, the list of these Monographs is as follows:

I. The Precious Metals, by Clarence King. In preparation.

II. Tertiary History of the Grand Cañon District, with atlas, by Capt. C. E. Dutton. Published.

III. Geology of the Comstock Lode and Washoe District, with atlas, by George F. Becker. Published.

IV. Comstock Mining and Miners, by Eliot Lord. In press.

V. Copper-bearing Rocks of Lake Superior, by Prof. R. D. Irving. In press.

VI. Older Mesozoic Flora of Virginia, by Prof. William M. Fontaine. In press.

VII. Silver-lead Deposits of Eureka, Nevada, by Joseph S. Curtis. In press.

VIII. Paleontology of the Eureka District, Nevada, by Charles D. Walcott. In press.

Geology and Mining Industry of Leadville, with atlas, by S. F. Emmons. In preparation.

Geology of the Eureka Mining District, Nevada, with atlas, by Arnold Hague. In preparation.

Coal of the United States, by Prof. R. Pumpelly. In preparation.

Iron in the United States, by Prof. R. Pumpelly. In preparation.

Lesser Metals and General Mining Resources, by Prof. R. Pumpelly. In preparation.

Lake Bonneville, by G. K. Gilbert. In preparation.

Dinocerata. A monograph on an extinct order of Ungulates, by Prof. O. C. Marsh. In press.

Synuroda, by Prof. O. C. Marsh. In preparation.

Stegosauria, by Prof. O. C. Marsh. In preparation.

Of these Monographs, Nos. II, III, and IV are now published, viz:

ADVERTISEMENT.

II. Tertiary History of the Grand Cañon District, with atlas, by C. E. Dutton, Capt. U. S. A. 1882. 4°. 264 pp., 42 pl. and atlas of 26 double sheets folio. Price \$10.12.

III. Geology of the Comstock Lode and Washoe District, with atlas, by George F. Becker. 1882. 4°. 422 pp. 7 pl. and atlas of 21 sheets folio. Price \$11.

IV. Comstock Mining and Miners, by Elliot Lord, 1883. 4°. 451 pp. 3 pl. Price \$1.50.

Nos. V, VI, VII, and VIII are in press and will appear in quick succession. The others, to which numbers are not assigned are in preparation.

BULLETINS.

The Bulletins of the Survey will contain such papers relating to the general purpose of its work as do not properly come under the heads of ANNUAL REPORTS or MONOGRAPHS.

Each of these Bulletins will contain but one paper and be complete in itself. They will, however be numbered in a continuous series, and will in time be united into volumes of convenient size. To facilitate this each Bulletin will have two paginations, one proper to itself and another which belongs to it as part of the volume.

Of this series of Bulletins, Nos. 1, 2, 3, 4, 5, and 6 are already published, viz:

1. On Hypersthene-Andesite and on Triclinic Pyroxene in Augitic Rocks, by Whitman Cross, with a Geological Sketch of Buffalo Peaks, Colorado, by S. F. Emmons. 1883. 8°. 42 pp. 2 pl. Price 10 cents.

2. Gold and Silver Conversion Tables, giving the coining value of Troy ounces of fine metal, &c., by Albert Williams, jr. 1883. 8°. 2 p. l. 8 pp. Price 5 cents.

3. On the Fossil Faunas of the Upper Devonian, along the meridian of 76° 30', from Tompkins County, New York, to Bradford County, Pennsylvania, by Henry S. Williams. 1884. 8°. 31 pp. Price 5 cents.

4. On Mesozoic Fossils, by Charles A. White. 1884. 8°. 36 pp. 9 pl. Price 5 cents.

5. A Dictionary of Altitudes in the United States, by Henry Gannett. 1884. 8°. 325 pp. Price 20 cents.

6. Elevations in Canada, by J. W. Spencer, 1884. 8°. — pp. Price 5 cents.

Nos. 7 and 8 are in press.

STATISTICAL PAPERS.

A fourth series of publications having special reference to the mineral resources of the United States is contemplated. Of that series the first has been published, viz: Mineral Resources of the United States, by Albert Williams, jr. 1883. 8°. xvii, 813 pp. Price 50 cents.

Correspondence relating to the publications of the Survey, and all remittances—which must be by postal note or money order—should be addressed to the

DIRECTOR OF THE UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C.

WASHINGTON, D. C., June 15, 1884.

DEPARTMENT OF THE INTERIOR

BULLETIN

OF THE

UNITED STATES

GEOLOGICAL SURVEY

No. 6



WASHINGTON
GOVERNMENT PRINTING OFFICE
1884



UNITED STATES GEOLOGICAL SURVEY

J. W. POWELL DIRECTOR

ELEVATIONS

IN THE

DOMINION OF CANADA

BY

J. W. SPENCER



WASHINGTON
GOVERNMENT PRINTING OFFICE
1884



LETTER OF TRANSMITTAL.

COLUMBIA, Mo., *January, 1884.*

SIR: I have the honor herewith of transmitting to you, for publication, almost all of the more important elevations in the provinces of Ontario and Quebec, in Canada, which have been ascertained by railway and canal surveys, completed at the close of the year 1882. Especially in the region between the Great Lakes is the record nearly complete.

I have the honor, sir, to be your obedient servant,

J. W. SPENCER.

Hon. J. W. POWELL,

Director of the United States Geological Survey.

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PREFACE.

knowledge of accurate levels in the study of many geological problems is growing to be as necessary as the balance has been in chemistry. In my various studies of the "Geology of the Region about the Eastern End of Lake Ontario," the necessity of having accurate altitudes compelled me to collect many railway levels, and often to ascertain altitudes of other points myself. The result was that between 1870 and 1882 I had collected, with much trouble, the altitudes of all railroads whose profiles were in existence. Owing to the fact that many of the smaller roads had been constructed independently, and subsequently united with larger organizations, it not infrequently happened that their profiles were buried away in some obscure office, or altogether lost.

The elevation of Lake Erie above Lake Ontario, by the levels of the Erie Canal, is 326.75 feet. The United States Lake Survey's determination of the height of Lake Erie above mean ocean level is 572.86 feet. Subtracting the one from the other, the elevation of Lake Ontario above mean ocean level would be 246.11 feet. The elevation of Lake Ontario, by the United States Lake Survey, is 246.61 feet above mean ocean level.

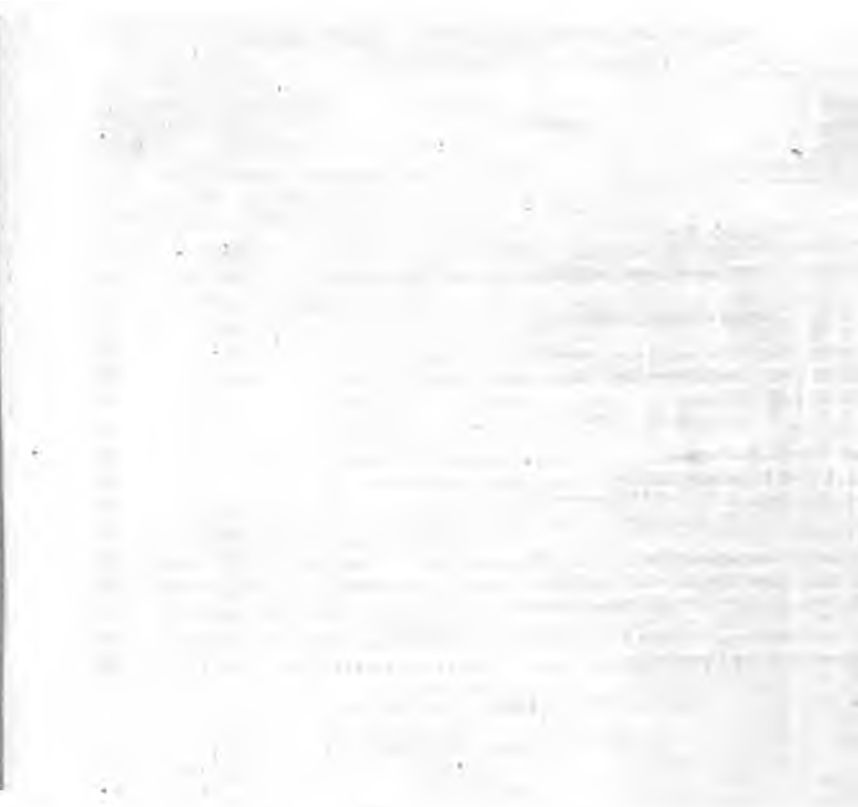
Canadian survey levels have been referred to either Lake Ontario or to Lake Erie, or to Lake Saint Peter. The latter is an expansion of the Saint Lawrence River, to which high tide reaches, and its mean level is 11 feet above the mean level of the ocean.

When these tables were compiled in 1882, the Grand Trunk Railway Company had absorbed the Great Western Railway and most of the other Canadian lines, but their original names are everywhere retained as divisions or branches of the Grand Trunk Railway.



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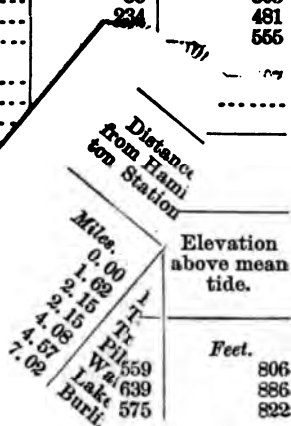
ELEVATIONS IN THE DOMINION OF CANADA.

BY J. W. SPENCER.

RAILROAD PROFILES.

GREAT WESTERN RAILWAY, MAIN LINE.

Distance from Niag- ara Falls.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
		<i>Feet.</i>	<i>Feet.</i>
	Niagara River:		
	East side of cañon	300	547
	West side of cañon	308	555
0.00	Niagara Falls, Ontario	396	573
2.84	Track	362	609
2.84	Summit (sand and gravel)	386	633
324.84	St. David's valley, track over	292	539
9.19	Meritton	143	390
9.39	Welland canal crossing	142	389
10.61	.....	120	367
10.70	Bed of creek	20	267
11.10	St. Catharine's	110	357
14.26	Bed of Fifteen-Mile creek	00	247
15.34	Sixteen-Mile creek	-4	243
15.45	.....	65	312
16.95	Jordan station	64	311
17.23	Twenty-Mile creek, bed	-8	239
22.69	Beamsville station	47	294
26.60	Grimsby station	40	287
31.72	Winona station	38	265
37.22	Stony Creek station	28	275
43.33	Hamilton station	8	255
45.02	Toronto Branch junction	58	305
49.00	Mile post	234	481
49.41	Summit of gravel ridge (original surface) ...	234	555
	Spencer's creek:		
49.53	Bed		
49.53	Track		
49.73	Dundas station		
51.70	Flamboro' station (old)		
53.75	Summit of drift hills		
54.73	Copetown station		
54.92	Bed of Elliot's pond		
59.09	Lynden station		
61.84	Bed of valley		
	Harrisburg station:		
62.25	Track		
62.25	Original ground		
64.01	Fairchild's creek, bridge		
64.01	Do. do. bed		
67.23	.....	



Great Western, main line—Continued.

Distance from Niag- ara Falls.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
	Grand river:		
69.50	East side	577	824
69.92	Bed	495	742
72.06	West side	577	824
74.90	Paris station	595	842
75.19	.....	610	857
75.23	Bed of valley of Nith's creek	550	797
	.....	620	867
78.98	Princeton station	685	932
79.92	Horner's Creek, bed	635	882
84.00	Governor's Road, siding	720	967
86.27	Eastwood station	726	973
87.69	Summit	775	1,022
90.72	Woodstock station	710	957
95.55	Beechville station	660	907
100.00	Ingersoll station	632	879
109.66	Dorchester station	605	852
119.28	London, Richmond street	559	806
	Thames River:		
119.50	East side	553	800
	Bed	507	754
119.73	West side	560	807
	Cove of Thames:		
120.17	East side	550	797
120.64	Bottom	505	752
122.82	West side	680	927
129.17	Komoka station	564	811
139.96	Longwood station	505	752
142.50	Canada Southern railroad crossing		
144.89	Oppin station	496	743
149.62	Glencoe station	483	730
155.87	Newbury station	455	702
160.70	Bothwell station	444	691
169.51	Thamesville bridge	376	623
169.51	bed of river	340	587
174.34	Lewisville station	368	615
183.33	Chatham station	351	598
198.11	Baptist Creek station	348	595
202.84	Stoney Point station	340	587
211.66	Bell river, bed	320	567
220.81	Tecumseh station	343	590
228.82	Windsor station	335	582

GREAT WESTERN RAILWAY—TORONTO BRANCH.

Distance from Hamil- ton Station.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	Hamilton station	8	255
1.62	Toronto junction	58	305
2.15	Track over old outlet of Dundas marsh	82	329
2.15	Piles driven in marsh to below lake Ontario	—40	207
4.08	Waterdown station, ground	98	345
4.57	Lake Terrace (Ballast Hill)	118	365
7.02	Burlington station	93	340

Toronto branch—Continued.

Distance from Hamil- ton Station.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
	Twelve-Mile creek:		
12. 94	Track	96	345
12. 94	Bed of creek	29	276
13. 50	Bronté station	99	346
17. 07	Bed of creek	6	253
17. 51	Oakville station	93	340
20. 62	.....	104	351
	Credit valley:		
24. 46	South side	36	283
	Piles driven to	—20	227
25. 88	North side	34	281
29. 30	Track	55	312
29. 30	Bed of valley	10	257
32. 19	Mimico station	60	307
32. 69	Mimico river, bed	—2	245
39. 00	Toronto station	8	255

G. W. R.—BRANTFORD AND TILSONBURG LINE.

Distance from Harris- burg junc- tion.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0. 00	Harrisburg junction	487	734
0. 75	Fairchild's creek, bed	412	659
7. 31	G. T. R. crossing	439	686
	Brantford:		
8. 14	Bridge over Grand river	412	659
8. 14	Bed of Grand river	398	645
12. 60	Mount Pleasant station	563	810
15. 57	Mount Vernon station	592	839
17. 30	Burford station	597	844
21. 00	Harley station	590	837
28. 08	Norwich station	597	844
34. 90	Springford station	575	822
	Tilsonburg:		
39. 12	Canada Southern railway crossing	550	797
40. 25	Station	538	785
42. 75	Junction .....	.....	.....

G. W. R.—SARNIA BRANCH.

Distance from Lon- don.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0. 00	London station	559	806
4. 22	Hyde Park junction	639	886
10. 00	Komoka junction	575	822

Sarnia branch—Continued.

Distance from London.	Localities.	Elevation above Lake Ontario.	Elevation above mean time.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
20.23	Strathroy station	500	747
	Do. Sydenham river, bed	475	722
33.38	Watford station	540	787
41.81	Wanstead station	455	702
45.38	Wyoming station	465	712
51.10	Mandamin station	400	647
60.89	Sarnia (near lake Huron)	342	589

G. W. R.—LONDON AND PORT STANLEY BRANCH.

Distance from Port Stanley.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	Port Stanley, level of lake Erie	327	574
3.70	.....	443	690
4.55	Kettle Creek bridge	488	735
7.87	Saint Thomas station	511	758
16.18	Summit of track	673	920
23.58	London	567	814

G. W. R.—LONDON, HURON AND BRUCE BRANCH.

Distance from London.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	London (Richmond st.)	559	806
4.22	Hyde Park junction	639	886
11.22	Ilderton station	690	937
15.58	Brecon station	653	900
19.22	Au Sable river, track	624	871
	Do. do. bed	598	845
20.69	Clandeboy station	641	888
26.50	Centralia station	620	867
31.11	Exeter station	628	875
37.17	Hensall station	652	899
43.23	Brucefield station	643	890
50.06	Clinton station	672	919
56.20	Maitland river, bed	695	942
56.86	Londesborough station	727	974
60.80	Blyth station	834	1,081
62.55	Summit	877	1,124
67.23	Belgrave station	815	1,062
72.06	Bed of valley	765	1,012
74.00	Wingham station	834	1,081

London, Huron and Bruce branch—Continued.

Distance from Glen- coe junc- tion.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0. 00	Glencoe junction	48.	728
	Thames river:		
11. 70	Track	453	700
11. 70	Bed	383	630
15. 20	Lawrence (near)	495	742
	Kettle creek:		
26. 75	Bridge	500	747
	Bed of	420	667
28. 00	St. Thomas (near)	520	767
37. 75	Aylmer (near)	514	761
46. 20	Corinth station	520	767
52. 00	Otter creek, bed of	404	651
53. 25	Tilsonburg (near)	538	785
56. 50	Cortland (near)	529	776
	Big Creek:		
63. 00	Track	515	762
63. 00	Bed of	424	671
64. 25	Delhi (near)	548	795
73. 00	Simcoe station	472	719
83. 50	Jarvis station	454	701
92. 00	.....	468	715
96. 60	Grand river bridge, near Cayuga station	368	615
96. 60	Bed of Grand river	324	571
103. 20	G. T. R. crossing	369	616
123. 00	Frank's creek	328	575
125. 75	Welland canal feeder	339	586
128. 50	Welland railway crossing	330	577
138. 00	Stevensville station	345	592
142. 75	Erie and Niagara railway crossing	348	595
145. 40	Niagara river	325	572

WELLINGTON, GRAY AND BRUCE RAILWAY COMPANY, OPERATED BY
THE G. W. R. CO.

Distance from Harris- burg junc- tion.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0. 00	Harrisburg, junction with main line of G. W. R.	487	734
2. 40	Fairchild's creek (Dumfries branch), track ..	513	760
6. 13	Branchton station	650	897
11. 82	Galt station	641	888
16. 00	Preston station	680	927
17. 72	Ballast Hill	718	965
19. 07	Speed river, track	686	933
19. 38	Hespeler station	695	942
27. 33	Guelph station	832	1, 079

Wellington, Grey and Bruce railway—Continued.

Distance from Guelph.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	Guelph station	832	1,078
8.70	Hurst's creek, bed	902	1,149
	Swan creek:		
11.02	Track	970	1,217
11.02	Bed	911	1,158
13.31	Elora station	1,050	1,297
	Do. Grand river:		
14.75	East side	1,080	1,327
	Bed	992	1,239
16.00	Fergus station	1,111	1,358
	Irwine river:		
19.00	East side	1,135	1,382
	Bed	1,074	1,321
24.60	Summit	1,235	1,482
27.30	Goldstone station	1,214	1,461
31.10	Drayton station	1,147	1,394
35.00	Moorefield station	1,104	1,351
42.10	Palmerston station	1,067	1,314
47.80	Harriston station	1,017	264
54.23	Clifford station	987	1,234
63.23	Mildmay station	783	1,030
69.01	Walkerton station	686	933
77.80	Pinkerton station	614	861
84.29	Paisley station	529	776
	Teeswater river:		
84.61	Bed	462	709
84.61	Track over	525	772
97.00	Port Elgin station	428	675
101.14	Southampton station	369	616
101.30	Do. Lake Huron, Ang., 1872	335	582

W. G. & B. R.—SOUTH EXTENSION.

Distance from Palmerston.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	Palmerston station	1,067	1,314
5.62	Gowanstown station	1,038	1,285
8.71	Listowel station	1,016	1,263
14.68	Newry station	957	1,204
18.81	Henfryn siding	919	1,166
21.78	Ethel station	927	1,174
27.35	Brussels station	875	1,122
30.00	Gravel bed	848	1,095
34.15	Bluevale station	832	1,079
35.00	Maitland river, bed	797	1,044
37.22	Wingham station	835	1,082
38.54	Maitland river, bed	757	1,004
43.64	Kinloss (Whitechurch) station	799	1,046
50.00	Lucknow station	663	910
57.00	Pine river, bed	536	783
58.18	Ripley siding	560	807
66.38	Kincardine station	343	590
66.41	Kincardine, Lake Huron	335	582

WELLAND RAILWAY—OPERATED BY G. W. R.

Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
	<i>Feet.</i>	<i>Feet.</i>
Lake Ontario		247
Saint Catherine's, old station	128	375
G. W. R. crossing	210	457
Thorold station	306	553
Allanburg station	345	592
Port Robinson station	342	589
Welland river bed	322	569
Welland station	355	602
Port Colborn station	339	586
Lake Erie	330	577

NOTE.—All the elevations along the Great Western railway and its branches were obtained from the various profiles, through the kindness of the chief engineer, and reduced to a common datum.

The elevations given are those of track when opposite the station; elsewhere those of the natural ground have been adopted. The above tables cover most undulations of surface ranging more than 20 or 30 feet in height.

HAMILTON AND NORTHWESTERN RAILWAY.

Distance from Port Dover.	Location.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	Lake Erie, at Port Dover	328	575
0.15	.....	380	627
8.90	Jarvis, Loop Line crossing	452	699
14.80	.....	483	730
15.96	Hagersville (near)	449	696
21.00	.....	382	629
23.30	.....	438	685
	Grand river at Seneca :		
23.56	South bank	405	652
	Bed	365	622
23.75	North bank	397	644
24.31	Seneca, crossing of plank road	406	653
26.30	.....	439	686
28.01	Chippewa creek	424	671
29.69	Summit	493	740
34.95	Brow of Niagara escarpment	396	643
39.18	Hamilton :		
	Wentworth street, south	130	377
40.00	Station (King street)		
	Barton street	30	277
42.00	Wentworth street, north	19	266
48.50	Burlington, beach (Ocean House)	8	255
50.00	..... station	6	253
51.50	..... do. G. W. R crossing	71	318
57.40	.....	276	523
63.25	Milton station	414	661
76.00	Georgetown (gravel bed)	644	891
78.50	Glen Williams	663	910
93.00	Caledon (sand bed near)	695	942

Hamilton and Northwestern Railway—Continued.

Distance from Port Dover.	Location.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
100.20	Summit north of Palgrave.....	722	969
111.50	Beeton junction.....	469	716
120.60	Everett station.....	549	796
129.20	Glencairn station.....	491	738
139.50	Summit.....	805	1052
143.00	Duntroon station.....	689	936
147.60	Nottawa station.....	460	707
150.20	Collingwood station.....	342	589
	.....do.....lake Huron.....	331	578
0.00	Beeton junction, on branch.....	469	716
12.50	Thornton station.....	695	942
14.00	Summit station.....	751	998
22.30	Allandale station.....	508	755
26.00	Barrie station.....	625	872
	Barrie, Lake Simcoe.....	475	722

NOTE.—South of Hamilton, elevations refer to original ground. North of Hamilton reference is to track.

NORTHERN RAILWAY—MAIN LINE.

Distance from Toronto.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	Lake Ontario, at Toronto.....	00	247
7.00	Gravel pit.....	204	51
8.12	Weston station.....	337	584
12.33	York station.....	425	372
14.50	Thornhill station.....	386	633
19.00	Richmond Hill (Gravel pit).....	600	847
22.75	King station.....	708	955
26.60	Summit.....	755	1,002
34.30	Newmarket station.....	525	772
38.00	Holland Landing.....	496	743
41.00	.....do river.....	478	725
42.00	Bradford station.....	478	725
44.50	Scanbors station.....	494	741
49.00	Gilford station.....	506	753
52.00	Lefroy station.....	532	779
53.00	Gravel ridge.....	520	767
57.00	Bramley station.....	641	888
57.75	Craigvale station.....	632	879
61.50	Thompson station.....	545	792
62.50	Gravel pit.....	520	767
63.00	Allandale (near Barrie).....	491	738
63.00	Lake Simcoe.....	475	722
68.75	Colwell junction.....	503	750
72.75	Nottawasaga river.....	380	627
73.50	Angus (Pine river).....	380	627
74.50	Gravel ridge.....	389	636
77.60	Brentwood station.....	400	647
80.00	Sunnidale station.....	375	622
86.00	Stayner station.....	470	717

Northern Railway—Main Line—Continued.

Distance from Toronto.	Location.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
94.70	Collingwood station.....	343	590
94.70	.....do.....Lake Huron.....	337	584
100.00	Craigleith station.....	344	591
106.10	Gravel pit.....	354	601
107.00	Thornbury station.....	365	612
112.00	Summit.....	510	757
115.00	Meaford station.....	427	674

NORTHERN RAILWAY—MUSKOKA BRANCH.

Distance from Toronto.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
64.12	Barrie (Lake Simcoe).....	475	722
64.20	...do...station.....	479	726
66.30	Kempenfeldt.....	510	757
70.00	Gowan.....	572	819
71.20	Summit.....	593	840
78.20	Hawkestone.....	532	779
81.00	.....do.....	575	822
82.50	Gravel pit.....	483	730
86.30	Orillia.....	479	726
88.50	Narrows of Lake Couchouching.....	496	733
94.00	Longford station.....	429	736
95.00	.....do.....	519	766
98.00	Severn river, east branch.....	483	730
99.00	Washago.....	482	729
99.50	Severn river, west branch.....	485	732
100.50	...do...station.....	478	725
100.50	...do...station (water).....	464	711
100.70	...do...river.....	.....	.....
102.40	Gravel pit.....	480	727
104.40	.....do.....	369	616
106.20	Lethbridge station.....	509	756
106.00	Rock pass.....	530	777
109.30	Summit.....	605	852
111.30	Gravenhurst station.....	572	819
112.40	Muskoka lake.....	500	747

NORTHERN RAILWAY—PARRY SOUND BRANCH.

Distance from Colwell junction.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	Colwell junction (68.75 miles from Toronto) ..	503	750
3.71	.....	457	704
4.15	Sand pit	451	698
7.58	Minessing station	372	619
11.04	Sand bed	490	737
15.78	Phelpston station	477	724
22.63	Marsh, track over	440	687
25.95	Wyeville station	525	772
30.36	Summit of branch	544	791
35.61	Penetanguishene station	342	589

The Hamilton and Northwestern Railway Company and the Northern Railway Company are now amalgamated. The levels of both roads were furnished through the kindness of Mr. Harry Holgate, assistant engineer of the united roads. The levels from Lake Erie to Hamilton, were obtained from the chief engineer during the construction before the stations were located. The altitudes of the stations on Northern Railway refer to track.

TORONTO, GREY AND BRUCE RAILWAY.

Distance from Toronto.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	Toronto station	8	255
2.25	.....do.....Queen Street junction	57	304
5.00	Carlton (sand and gravel bed)	160	407
8.50	Weston station	182	429
14.00	Sand and gravel bed	280	527
	Humber valley:		
14.50	East side	268	515
15.20	Bridge	224	471
16.20	{ West side	{ 311	{ 558
	{ Woodbridge station		
18.00	Sand and gravel bed	370	617
21.50	Kleinburg	468	715
26.30	Bolton station	591	838
32.75	Mono Road	729	976
34.00	Gravel bed	710	957
37.00	.....do.....	990	1,237
38.75	.....	1,130	1,377
41.25	Charleston station (gravel bed near by)	1,120	1,367
44.60	Alton station	1,051	1,298
48.60	Orangeville station	1,151	1,398
52.50	.....do.....junction	1,369	1,616
58.00	Sand and gravel bed	1,340	1,587
64.50	Shelburne station	1,382	1,629
75.80	Dundalk station	1,454	1,701
76.20	Summit	1,462	1,709
81.00	Proton station	1,366	1,613
86.00	Flesherton (adjacent sand and gravel bed) ..	1,310	1,557
93.00	Markdale station	1,112	1,359
98.00	Berkley station	1,082	1,329

Toronto, Grey and Bruce Railway—Continued.

ce o.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
		<i>Feet.</i>	<i>Feet.</i>
.00	Gravel (deposits for several miles)	1,000	1,247
.00	Williamsford station	965	1,212
.80	Speed river	700	947
.00	Chatsworth station (gravel beds)	697	944
.00	Sydenham river	690	937
.20	Rockford station	655	912
	Owen sound:		
.80	Station	339	586
	Georgian bay	335	582

ALONG WEST BRANCH.

60	Orangeville junction	1,369	1,616
50	Amaranth station (sand and gravel)	1,299	1,546
50	Waldemar station	1,248	1,495
.80	Luther station	1,297	1,544
70	Summit	1,332	1,579
50	Arthur	1,278	1,525
.00	Kenilworth	1,239	1,486
.00	Sand and gravel bed	1,130	1,377
.00	do	1,130	1,377
.00	Mount Forest station	1,103	1,350
.00	Page station	1,036	1,283
70	Harriston station	999	1,246
.00	Fordwich station	953	1,200
.00	Gorrie and Wroxeter station	876	1,123
.00	Sand and gravel beds	850	1,097
.00	Teeswater station	777	1,024

ions, referring to track, were furnished through the kindness of Edmund Esq., chief engineer and general manager of the railroad.

CREDIT VALLEY RAILROAD.

00	Toronto station	8	255
80	Lambton station	165	412
90	Humber river bed	153	400
20	Cooksville station (gravel)	146	393
40	Streetsville station	252	499
40	do	306	553
10	Milton station	416	663
70	Campbellville station	682	929
70	do	760	1,007
20	Galt station	659	936
20	Galt, bed of Grand river	616	863
20	Ayr station	718	965
10	Wolverton station	715	962
30	Drumbo station	766	1,013
60	Blaudford station	725	972
60	Innerhip station	725	972
80	Woodstock station	700	947

ORANGEVILLE AND ELORA BRANCH.

Distance from Toronto.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
21.60	Streetsville junction	305	552
23.60	Meadsville station	319	566
29.10	Brampton station	477	724
45.50	Forks of the Credit	218	1,068
	Credit river:		
46.25	Bridge	861	1,108
46.25	Bed	761	1,008
48.20	Elora junction (Church Falls)	1,013	1,260
56.50	Orangeville	1,111	1,358
48.20	Elora junction	1,013	1,260
52.90	Erin station	1,048	1,295
56.60	Hillsburg station	1,177	1,424
61.10	Garafraxa station	1,205	1,452
64.50	Summit station	1,286	1,533
73.20	Fergus station	1,110	1,357
75.70	Elora station	1,054	1,301

The above levels were kindly furnished by H. S. Holt, Esq., chief engineer.

CANADA SOUTHERN RAILWAY.

Distance from Buffalo.	Localities.	Elevation above Lake Erie.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	Niagara river at Buffalo, September, 9, 1870.	00	573
0.11	Fort Erie station	24	597
0.90	Victoria station	34	607
2.22	Erie and Niagara railway junction	35	608
6.52	Black creek bed	— 5	568
7.22	Stevensville station	16	589
14.20	Brookfield	37	610
17.51	Welland station	16	589
17.69	do canal bed (1880)	—11	562
22.50	.....	15	588
23.10	Forks creek, bed	—12	561
26.50	Perry's station	17	590
34.91	Attercliff station	18	591
42.31	Canfield (G. T. R. crossing)	48	621
64.12	.....	92	665
48.80	Dean's station	64	637
49.53	Grand river, bed	8	581
50.50	Decew's pond, bed	27	600
55.49	.....	125	698
58.62	Hagersville station	167	740
66.49	Villa Nova station	159	732
68.56	Surface of ground	182	755
68.57	Nanticoke creek bed	145	718
71.38	Waterford station	190	763
77.80	Windham station	244	817
82.10	Pt. Dover and Lake Huron railway crossing	219	792
83.33	Hawtrey	213	786
88.00	Otter creek bed	159	732
88.43	Cornell station	224	797
93.80	Tilsonburg station	233	806
105.19	Springfield station	223	796

Canada Southern Railway—Continued.

Distance from Buffalo.	Localities.	Elevation above Lake Erie.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
112.01	Cat Fish creek	141	714
118.29	Saint Thomas station	193	766
119.66	Kettle creek bed	92	665
119.75	Surface of ground	184	757
122.20	Saint Clair junction	192	765
127.27	Shedden station	153	726
131.17	Iona station	172	745
143.61	Bismarck station	138	711
148.10	Rodney station	120	693
151.40	Taylor station	150	723
154.10	Muirkirk station	152	725
156.23	Highgate station	160	739
161.82	Ridgetown station	87	660
168.00	Harwich station	78	651
175.20	Charing Cross station	55	628
181.40	Buxton station	29	602
185.41	Fletcher station	26	599
192.50	Tilbury station	19	592
195.00	Baptist creek	9	582
199.00	Comber station	31	604
207.90	Woodslee station	46	619
213.50	Essex Center station	73	646
221.40	Colchester station	38	611
227.00	Canard river bed	12	585
228.80	Amherstburg, top of bank	27	600
229.20	Detroit river	7	580

CANADA SOUTHERN RAILWAY—SARNIA BRANCH.

Distance. from St. Thomas.	Localities.	Elevation above Lake Erie.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	Saint Thomas station	193	766
3.80	Saint Clair junction	192	765
5.30	Loop line (S. W. R.) crossing	174	747
9.10	Southwold station	172	745
12.20	Thames river:		
	East bank	146	719
	Bed	75	648
12.50	West bank at Delaware station	157	730
19.20	Melbourne station	162	73
20.20	G. W. R. crossing	173	746
25.40	Ekfrid station	177	750
31.30	Walker's station	159	732
35.10	West bank of Sydenham river	160	733
40.70	Inwood station	118	691
48.00	Oil City station	90	663
49.10	Fox Creek bed	65	638
56.70	Brigden station	63	636
57.40	Bear Creek bed	18	591
66.40	Courtright	11	584
	.... do. at Saint Clair river		

The elevations of the Canada Southern railway were furnished through the kindness of W. B. Gossage, Esq., chief engineer of the C. S. R., in 1881.

GRAND TRUNK RAILWAY—BRANTFORD AND GODERICH DISTRICT.

Distance. from Int. Bridge.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	International Bridge	341	588
1.75	Niagara river surface	320	567
10.00	Fort Erie station	359	606
20.00	Bertie station	371	618
33.00	Port Colborne station	334	581
38.88	Welland canal feeder bridge	339	586
46.25	Dunville station	338	585
52.00	Canfield junction Crossing	369	616
59.38	Cook's station	396	643
62.75	Seneca (Caledonia) station	411	658
64.75	.....	434	681
69.50	Big creek bed	370	617
75.00	Onondaga station	417	664
76.00	.....	484	731
71.38	G. W. R. crossing	441	688
81.50	Brantford station	459	706
83.50	.....	609	856
	Grand river:		
	Bed	568	815
	Bridge	485	732
84.25	Paris station	596	843
87.00	.....	663	910
88.38	Nith's creek bed	589	836
93.38	Summit near Drumbo	777	1,024
98.25	Bright station	794	1,041
108.00	Tavistock station	890	1,137
115.75	Stratford station	943	1,190
120.75	.....do.... bed of Avon river	892	1,139
120.75	Sebringville station	926	1,173
123.12	Summit	966	1,213
128.75	Mitchell station	875	1,122
133.63	Dublin station	857	1,104
140.25	Seaforth station	762	1,009
148.38	Clinton station	674	921
153.25	.....	670	917
161.25	Goderich station	483	730
163.00	.....do.... (elevation near surface of Lake Huron)	338	585

GRAND TRUNK RAILWAY—WESTERN DIVISION.

Distance from Montreal.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
333.00	Toronto station	8	255
338.12	Carlton station	159	405
341.38	Weston station	179	426
342.50	Humber bridge	211	458
342.50	.....do.... river	142	389
346.50	Mimico bridge	293	540
346.50	.....do.... river	265	512
348.12	Malton station	303	550
353.75	Etobicoke river bed	443	690

Grand Trunk Railway—Western Division—Continued.

Distance from Montreal.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
354. 12	Brampton station	466	713
359. 63	Norval station	572	819
361. 25	Credit bridge	581	828
361. 25	.....do..river	467	714
362. 00	Georgetown station	600	847
362. 75	.....do..junction (H. & N. W. Ry.)	627	874
365. 25	Limehouse station	810	1,057
366. 75	.....do..siding	847	1,094
368. 38	Acton station	912	1,159
372. 63	.....do.....	972	1,219
373. 75	Eremosa river (water)	894	1,141
374. 00	Rockwood station	936	1,153
381. 25	Speed river bed	783	1,030
381. 38	Guelph station	821	1,068
386. 50	Mosboro station	838	1,085
391. 00	Breslau station	778	1,025
391. 50	Grand river bed	714	961
395. 38	Berlin station	854	1,101
397. 12	Waterloo station	811	1,058
396. 00	Summit	869	1,116
395. 88	Berlin junction	848	1,095
401. 75	.....do.....	730	977
404. 38	Bridge near Blair	653	900
408. 50	Galt station	633	880
401. 75	Petersburg station	964	1,211
402. 88	.....do..... summit	1,002	1,249
405. 12	Baden station	910	1,157
407. 62	Hamburg station	880	1,127
408. 25	Nith river, bed	836	1,083
414. 75	Shakespeare station	937	1,184
420. 50	Port Dover and Lake Huron Ry. Crossing	947	1,194
421. 25	Stratford station	943	1,190
426. 38	Saint Paul's station	919	1,166
431. 38	Saint Mary's station	836	1,083
431. 38	London Branch junction	836	1,083
444. 50	Thorndale station	689	936
454. 00	London station	568	815
432. 25	Thames river (water)	741	988
438. 00	Fish creek (bed)	698	945
440. 75	Granton station	787	1,034
446. 62	Lucan station	744	991
453. 75	Ailsa Craig station	507	754
461. 50	Parkhill station	416	663
467. 75	An Sable bridge	370	617
467. 75	.....do..river (bed)	347	594
470. 00	Widder station	435	682
473. 50	Tool's Creek bridge	476	723
478. 88	Forrest station	465	712
488. 00	Camalachie station	402	649
492. 25	Perch station	348	595
496. 25	Blackwell station	355	602
501. 50	Sarnia station	340	587
	.....do..(water in St. Clair river)	335	582

Grand Trunk Railway—Western Division—Continued.

Distance from Port Huron.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>	IN MICHIGAN.	<i>Feet.</i>	<i>Feet.</i>
	Port Huron station	341	588
505.63	Chicago and Grand Trunk junction	376	623
523.00	Michigan Air-Line junction	476	723
528.88	New Haven	382	629
540.50	Clinton river (water)	326	573
552.00	Connois river (water)	361	608
561.00	Detroit junction	347	594

GRAND TRUNK RAILWAY—CENTRAL DIVISION.

Distance. from Mont- real.	Localities.	Elevation above Lake Saint Peter.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
*0.00	Montreal (crossing Wellington street)	40	51
14.50	Point Clair station	98	109
20.50	Saint Anne station	113	124
24.00	Vaudreuil station	82	93
37.50	Coteau Landing station	150	161
43.12	Rivière Baudette station	162	173
45.00	Interprovincial line	160	171
53.75	Lancaster station	154	165
67.38	Cornwall station	181	192
81.50	Farran's Point station	231	242
99.00	Iroquois station	232	243
104.38	Edwardsburg (Cardinal) station	266	277
112.12	Prescott junction	292	303
113.50	.....do.....station	299	310
125.25	Brockville station	270	281
129.50	Lynn station	275	286
138.00	Mallorytown station	325	336
146.12	Lausdown station	323	334
155.00	Ganonoque station	250	261
162.50	Ballantyne's station	350	361
168.38	Rideau station	292	303
172.63	Kingstown station	263	274
197.00	..... ..	359	370
198.50	Napanee river (water)	266	277
206.63	Tyendinaga station	325	336
220.25	Belleville station	275	286
220.62	.....do.....Moirs river (water)	256	267
231.88	Trent river (water)	238	249
232.12	Trenton station	254	265
241.50	Brighton station	293	304
245.00	The Dangers	259	270
249.00	Colborne station	311	322
263.50	Colbourg station	286	297
270.25	Port Hope station	276	287
278.00	Newtonville station	283	294
288.88	Newcastle station	285	296
290.25	Bownansville station	252	263
293.25	..... ..	369	380

Grand Trunk Railway—Central Division—Continued.

Distance from Mont- real.	Localities.	Elevation above Lake Saint Peter.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
299.50	Oshawa station	322	333
303.50	Whitby station	257	268
309.75	Duffin's Creek station	276	287
316.50	Port Union station	255	266
323.38	Summit	547	558
324.00?	Scarboro junction	535	546
331.38	Don creek (bridge)	242	253
333.00	Toronto station	243	254
.....	do.....Lake Ontario.....	235	246

GRAND TRUNK RAILWAY—EASTERN DIVISION.

0.00	Montreal :		
	Point Saint Charles.....	40	51
	Center of Victoria bridge	104	115
	Saint Lawrence river (beneath Victoria bridge)	22	33
6.50	Saint Lambert's junction	65	76
10.00	Saint Hubert's station	80	91
14.88	Saint Bruno station	87	98
21.12	Belœil station	52	63
21.12	do .. Richelieu river (surface)	37	48
22.25	Saint Hilaire station	75	86
28.12	Saint Madeleine station	108	119
35.62	Saint Hyacinthe station	100	111
36.12	Yomaska river (bed)	54	65
42.62	Britannia Mills station	211	222
48.00	Upton station	193	204
	do .. Black river (surface)	156	167
54.38	Acton station	301	312
54.75	Southeastern Railway junction	310	321
59.75	Moose river (surface)	330	341
62.00	Danby station	427	438
66.12	South Durham station	598	609
69.12	Lisgar station	518	529
74.75	Saint Francis river (surface)	466	477
76.50	Richmond station	380	391
86.38	Windsor station	409	420
94.50	Brompton Falls station	460	471
100.75	Magog river	452	463
101.12	Sherbrooke station	475	486
104.13	Lennoxville station	489	500
111.12	Waterville station	635	646
114.37	Compton station	723	734
117.13	Richby station	508	519
122.50	Coaticook station	996	1,007
127.62	Dixville station	1,116	1,127
132.50	International boundary (Canada and the United States)	1,340	1,351
137.00	Lake station, Vermont	1,241	1,252
141.25	Summit, Vermont	1,367	1,378
147.88	Island Pond station, Vermont	1,176	1,187
155.25	Wenlock station, Vermont	1,140	1,151
162.75	Connecticut River Bed, New Hampshire and Vermont, State Line	862	873
162.88	North Stratford, New Hampshire	897	908
166.50	Beathes, New Hampshire	865	876

Grand Trunk Railway—Eastern Division—Continued.

Distance. from Mont- real.	Localities.	Elevation above Lake Saint Peter.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
170. 87	Stratford Hollow station, New Hampshire.....	858	869
174. 38	Grovetown junction, New Hampshire.....	878	889
180. 25	River Ammonoosuc (bed) New Hampshire.....	943	954
180. 87	Stark station, New Hampshire.....	949	960
190. 00	West Milan (bed) New Hampshire.....	992	1,103
195. 75	Milan, water station, New Hampshire.....	1,055	1,066
202. 38	Berlin Falls station, New Hampshire.....	1,011	1,022
207. 75	Gorham station, New Hampshire.....	787	798
211. 50	Shelburne station, New Hampshire.....	698	709
217. 75	Gilead station, Maine.....	705	716
227. 25	Bethel station, Maine.....	643	654
232. 00	Loche station, Maine.....	715	726
241. 62	West Paris station, Maine.....	475	486
250. 00	South Paris station, Maine.....	381	392
256. 50	Oxford station, Maine.....	322	333
261. 00	Mechanic Falls station, Maine.....	289	300
267. 50	Lewiston junction, Maine.....	237	248
269. 75	Danville junction, Maine.....	192	203
269. 88	Maine Central railway (crossing) Maine.....	189	200
274. 62	New Gloucester station, Maine.....	107	118
282. 00	North Yarmouth station, Maine.....	91	102
286. 00	Yarmouth station, Maine.....	85	96
288. 38	Cumberland station, Maine.....	74	85
291. 75	Falmouth station, Maine.....	40	51
296. 00	Portland and Rochester junction, Maine.....	2	13
297. 75	Portland station, Maine.....	3	14
LEWISTON BRANCH.			
267. 50	Lewiston junction (main line) Maine.....	237	248
271. 50	Taylor Brook, Maine.....	194	205
272. 63	Auburn station, Maine.....	137	148
273. 00	Lewiston station, Maine.....	129	140

GRAND TRUNK RAILWAY—QUEBEC AND RICHMOND DIVISION.

0. 00	Montreal.....		
76. 50	Richmond station.....	380	391
88. 38	St. Cyr siding.....	471	482
92. 50	Kingsey station.....	433	444
100. 50	Warwick station.....	470	481
108. 50	Arthabaska station.....	419	430
117. 25	Stanford station.....	117	128
123. 25	Somerset station.....	431	442
131. 38	St. Julie Station.....	464	475
136. 00	Lyster station.....	435	446
143. 88	Methot's Mills station.....	433	444
152. 12	St. Agassiz station.....	395	406
157. 75	Craig's Road station.....	324	335
164. 88	Chaudiere Curve station.....	218	229
172. 00	Point Levi (opposite Quebec) station.....	3	14

Through the permission of Mr. Hanneford, the chief engineer of the Grand Trunk railway, Mr. James Wilson procured for me the levels of the Grand Trunk railway along its various divisions. As the original profiles were burned, the road has subsequently been relevelled, and the elevations of all the towns refer to track opposite the various stations. The horizontal measurements on the modern profiles do not always agree with those on time-tables, which were taken from the original profiles, and underwent subsequent changes.

TORONTO AND NIPISSING RAILWAY.

Distance. from Toronto.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	Toronto station	8	255
9.00	Scarboro junction	300	547
14.00	Agincourt station	322	569
17.00	Millikens station	404	651
20.00	Unionville station	330	577
22.50	Markham station	393	640
29.00	Stouffville station	645	892
34.00	Goodwood station	843	1,090
36.00	Summit station	893	1,140
41.00	Uxbridge station	630	877
49.00	Wicks station	609	856
53.00	Sunderland station	604	851
59.00	Cannington station	599	846
63.00	Woodville station	649	896
64.75	Midland railway junction	634	881
66.00	Argyle junction	613	860
71.00	Eldon junction	623	870
74.50	Portage road	664	911
76.00	Kirkfield station	645	892
79.00	Victoria road	590	837
87.00	Coboconk station	600	847
-----	.....do .....outlet of Balsam lake	(†) 588	835

These elevations refer to track opposite stations. They were furnished through the kindness of W. Goodenham, jr., Esq., president and managing director of the road. The road has subsequently passed under the management of the Midland railway.

MIDLAND RAILWAY.

Distance. from Port Hope.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	Lake Ontario at Port Hope	00	247
1.50	Sand ridge	95	342
3.00	Clay ridge	140	387
5.00	Quay's station	234	481
8.00	Perrytown station	405	652
12.00	Clay ridge	558	805
13.25	Ridge	665	912
14.00	Summit station	663	910
17.50	Millbrook station	525	772
20.33	Ridge	650	897
22.75	Caran's Creek (bed)	525	772
24.00	Ridge	675	922
26.00	Valley	387	634
29.00	Ridge	665	912
32.25	Pigeon creek (bed)	558	805
33.75	Ridge	663	910
41.00	Lindsay station	618	865
41.25	Seugog river (below dam)	561	808
42.50	..do .. river (above dam)	568	815
44.00	Victoria junction	606	853
48.00	Cambray's ridge	679	926

Midland Railway—Continued.

Distance from Port Hope.	Localities.	Elevation above Lake Ontario.	Elevat above n tide
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
57.00	Woodville junction	650	
65.00	Beaverton station	516	
67.00	Lancaster, surface of Simcoe lake	(†) 477	
67.50	Talbot river (bed)	465	
69.00	Gamebridge tation	550	
73.00	Brechin station	510	
73.50	Ridge of rocks	519	
75.00	{ Mara swamps	483	
78.00			
83.00	Bed of narrows between Simcoe and Conchouching lakes.	457	
90.00	North river bed	389	
101.00	Coldwater river bed	341	
108.00	Sturgeon river bed	331	
118.00	Midland, Georgian bay (average water-level)	332	

LAKEFIELD BRANCH.

17.00	Millbrook junction	525	
24.25	Moffat's creek	370	
30.50	Peterborough station	403	

MIDLAND RAILWAY—WHITBY DIVISION.

Distance from Whitby.	Localities.	Elevation above Lake Ontario.	Elevati above m tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	Lake Ontario at Whitby	00	
0.75	G. T. R. junction	21	
2.00	Whitby station	41	
6.00	Gravel ridge	251	
7.50	Brooklin station	292	
12.00	Clay ridge	649	
14.00	....do.....	781	
19.00	Port Perry station	592	
	....do.... Lake Scugog	(†) 596	
24.00	Clay ridge	628	
29.00	....do.....	680	
31.50	Manilla station	708	
33.50	Clay ridge	674	
42.00	....do.... opposite to Mariposa station	637	
43.50	....do.....	673	
45.25	Lindsay station	604	

GRAND JUNCTION DIVISION OF MIDLAND RAILWAY.

Distance from Belleville.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	Lake Ontario at Belleville	00	247
15.00	Junction of N. Hastings branch	269	516
19.25	Rawdon creek bed	157	404
20.00	Stirling station	168	415
26.00	Bed of creek	128	375
32.00	do.	293	540
33.10	Trent river bed (limestone)	232	479
33.50	Campbellford station	260	507
44.00	Hasting station	388	635
44.75	Trent river bed above Hastings' dam	365	612
49.25	Ouse river bed	373	620
53.75	.....	455	702
56.75	Indian river bed (limestone)	390	637
61.25	Ridge	495	742
65.00	Otonabee river bed	369	616
	Otonabee river (surface of water)	385	632
66.00	Peterborough station	403	650

NORTH HASTINGS BRANCH OF GRAND JUNCTION DIVISION.

0.00	Lake Ontario at Belleville .....	.....	247.00
5.00	Hayden's Corners	102.00	349.00
9.00	Moirs river bed	88.00	335.00
15.00	North Hastings junction	269.00	516.00
20.00	Rawdon creek	230.00	477.00
23.00	do	313.00	560.00
24.00	White lake (surface)	327.00	574.00
28.50	Granite ridge	333.00	580.00
27.50	Moirs lake (surface)	272.00	519.00
29.75	Madoc station	337.00	584.00
33.50	Seymour's mine (surface)	508.00	755.00
34.50	Stoney ridge (surface)	574.00	821.00
37.00	Moore's mine (surface)	538.00	785.00
39.00	Eldorado (terminus)	510.00	757.00

T. A. Hay, Esq., acting engineer of the Midland railway and Grand Junction railway, kindly furnished all the above elevations of the Midland railway and its branches.

ONTARIO AND QUEBEC RAILWAY.

Distances from Carlton.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	Carlton station, junction with Credit Valley railway (about 5 miles from Toronto)	147.00	394.00
3.82	Yorkville station	159.00	406.00
7.90	River Don:		
	Banks	174.00	421.00
	Bed	64.00	311.00

Midland Railway—Continued.

Distance from Port Hope.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
57.00	Woodville junction	650	897
65.00	Beaverton station	516	763
67.00	Lancaster, surface of Simcoe lake	(†) 477	724
67.50	Talbot river (bed)	465	712
69.00	Gamebridge tation	550	797
73.00	Brechin station	510	757
73.50	Ridge of rocks	519	766
75.00	{ Mara swamps	483	730
78.00			
83.00	Bed of narrows between Simcoe and Conchou- ching lakes.	457	704
90.00	North river bed	389	636
101.00	Coldwater river bed	341	588
108.00	Sturgeon river bed	331	578
118.00	Midland, Georgian bay (average water-level)	332	579
LAKEFIELD BRANCH.			
17.00	Millbrook junction	525	772
24.25	Moffat's creek	370	617
30.50	Peterborough station	403	650

MIDLAND RAILWAY—WHITBY DIVISION.

Distance from Whitby.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	Lake Ontario at Whitby	00	247
0.75	G. T. R. junction	21	268
2.00	Whitby station	41	288
6.00	Gravel ridge	251	498
7.50	Brooklin station	292	539
12.00	Clay ridge	649	896
14.00	....do.....	781	1,023
19.00	Port Perry station	592	839
....do....	Lake Scugog	(†) 596	843
24.00	Clay ridge	628	875
29.00	....do.....	680	927
31.50	Manilla station	708	955
33.50	Clay ridge	674	921
42.00	....do.... opposite to Mariposa station	637	884
43.50	....do.....	673	920
45.25	Lindsay station	604	851

SAINT LAWRENCE RIVER.

Distance from Montreal.	Localities.	Elevation above Lake Saint Peter.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
	Flats of Lake Saint Peter, Saint Lawrence river, to which high tide reaches .....	.....	11. 00
0. 00	Montreal, foot of No. 1 Lock, Lachine Canal	12. 00	23. 00
8. 50	Lake Saint Louis	55. 75	66. 75
	Beauharnois Canal:		
23. 75	Foot of	55. 75	66. 75
35. 00	Head of	140. 00	151. 00
	Cornwall Canal:		
67. 75	Foot of	140. 00	151. 00
79. 25	Head of	189. 25	200. 25
	Farran's Point Canal:		
84. 25	Foot of	189. 25	200. 25
85. 00	Head of	193. 25	204. 25
	Rapide Flat Canal:		
95. 50	Foot of	197. 00	208. 00
99. 50	Head of	212. 25	223. 25
	Galops Rapids Canal:		
101. 00	Foot of	212. 25	223. 25
111. 62	Head of	228. 00	239. 00
178. 00	Saint Lawrence, navigation at Kingston	234. 00	245. 00

OTTAWA RIVER AND RIDEAU NAVIGATION.

0. 00	Foot of No. 1 Lock, Montreal	12. 00	23. 00
8. 50	Junction of Ottawa and Saint Lawrence rivers at head of Lachine canal	55. 75	66. 75
120. 00	Entrance to Rideau canal at Ottawa city	118. 00	129. 00

Rideau canal and other water-courses between Ottawa city, on Ottawa river, and the Saint Lawrence river, at Kingston, form a navigation of 126.25 miles in length, with the summit of navigation 400 feet above lake Saint Peter, or 411 feet above mean tide.

The river elevations are taken from the Reports upon Public Works by the Chief Engineer of Canals.

QUEBEC, MONTREAL, OTTAWA AND OCCIDENTAL RAILWAY

Distance from Montreal.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
	MONTREAL TO OTTAWA.		
0. 00	Montreal, Hochelaga street and Montreal avenue .....	.....	70
2. 92	Mile-end station .....	.....	225
8. 22	Rivière des Prairies:		
	South bank .....	.....	82
	Surface of water .....	.....	00
	Rocky bed .....	.....	32
8. 65	North bank .....	.....	87
14. 20	.....	.....	150

Ontario and Quebec Railway—Continued.

Distance from Carlton.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
8.82	Little Don river bank.....	204.00	451.00
	.....do.....	91.00	338.00
13.31	Agincourt station.....	324.00	571.00
18.14	River Rouge bed.....	239.00	486.00
23.78	Duffin's creek station.....	399.00	646.00
29.22	Claremont station.....	638.00	885.00
32.12	Myrtle station.....	640.00	887.00
54.32	Summit.....	853.00	1,100.00
56.21	Poutypool station.....	817.00	1,064.00
68.30	Casan station.....	401.00	648.00
77.35	Peterborough, bed of Otonabee river.....	376.00	623.00
	Water-level of river.....	387.00	634.00
88.50	Indian river.....	414.00	661.00
113.65	Crow river.....	344.00	591.00
131.60	Gravel ridge.....	360.00	607.00
132.80	Tweed village.....	324.00	571.00
135.40	Moirs river bed (limestone).....	208.00	455.00
135.90	Granite ridge.....	252.00	499.00
136.80	Stoco lake.....	210.00	457.00
	Crossing Salmon river.....	363.00	610.00
	Clear lake.....	363.00	610.00
156.55	Sharbot lake.....	389.00	636.00
178.60	Summit.....	505.00	752.00
	Fall river crossing.....	328.00	575.00
	McGowan's lake.....	324.00	571.00
180.43	Perth station.....	184.00	431.00

As the road was not completed in the summer of 1883, the stations east of Peterborough were not located, but the country does not differ greatly in altitudes from those of the few above-mentioned lakes, &c.

These elevations were obtained from C. E. W. Dodwell, Esq., engineer of the Ontario and Quebec railroad.

SAINT LAWRENCE AND OTTAWA RAILROAD.

Distance from Prescott.	Localities.	Elevation above Lake St. Peter.	Elevation above mean tide.
<i>Miles.</i>		<i>Feet.</i>	<i>Feet.</i>
0.00	Saint Lawrence river at Prescott.....	228.00	239.00
3.41	Corner's ridge.....	309.00	320.00
7.86	Nation river bed.....	267.00	278.00
16.25	.....	344.00	355.00
22.25	Kemptville.....	280.00	291.00
27.18	Rideau creek.....	262.00	273.00
40.15	Spratt's ridge.....	340.00	351.00
52.78	Bed of Rideau river.....	100.00	111.00
53.20	Ottawa station.....	122.00	133.00

These elevations were taken from the profiles furnished by the chief engineer, J. S. Macklin, Esq.

The record of elevation of datum was defective, and the above reductions appear to be about 27 feet too low.

ALPHABETIC LIST OF ELEVATIONS IN CANADA, ABSTRACTED FROM THE FOREGOING PROFILES.

Station.	Authority.	Elevation above mean ocean level.
		<i>Feet.</i>
Acton, Ontario	Grand Trunk R. R.	1,159
Quebec	Grand Trunk R. R.	312
Agincourt	T. & N. R. R.	569
Ailsa Craig	Grand Trunk R. R.	754
Allanburg	Welland R. R.	592
Allandale	H. & N. W. R. R.	755
do	Northern R. R.	738
Attareliffe	Canada Southern R. R.	591
Alton	T., G. & B. R. R.	1,298
Amaranth	T., G. & B. R. R.	1,546
Angus (Pine River)	Northern R. R.	627
Appin	Great Western R. R.	743
Argyle	T. & N. R. R.	660
Arthabaska	Grand Trunk R. R.	430
Arthur	T., G. & B. R. R.	1,525
Aylmer	Q., M., O. & O. R. R.	222
Ayr	Credit Valley R. R.	965
Baden	Grand Trunk R. R.	1,157
Ballantyne's	Grand Trunk R. R.	361
Baptist Creek	Great Western R. R.	595
Barrie	Northern R. R.	726
Do	H. & N. W. R. R.	872
Do.. Lake Simcoe	Northern R. R.	722
Beaverton	Midland R. R.	763
Beeton junction	H. & N. W. R. R.	716
Beechville	Great Western R. R.	907
Belgrave	Great Western R. R.	1,062
Belleville	Grand Trunk R. R.	266
Beloeil	Grand Trunk R. R.	63
Do.. Richelieu river (surface)	Grand Trunk R. R.	48
Beausville	Great Western R. R.	294
Berkeley	T., G. & B. R. R.	1,329
Berlin	Grand Trunk R. R.	1,101
Do.. junction	Grand Trunk R. R.	1,095
Bertie	Grand Trunk R. R.	618
Bismarck	Canada Southern R. R.	711
Blackwell	Grand Trunk R. R.	602
Blanford	Credit Valley R. R.	972
Bluevale	W., G. & B. R. R.	1,079
Blyth	Great Western R. R.	1,061
Bolton	T., G. & B.	838
Bothwell	Great Western R. R.	691
Bowmanville	Grand Trunk R. R.	263
Bradford	Northern R. R.	725
Bramly	Northern R. R.	888
Brampton	Credit Valley R. R.	724
Do	Grand Trunk R. R.	713
Branchton	W., G. & B. R. R.	897
Brantford	Grand Trunk R. R.	706
Do.... bridge over Grand river	Great Western R. R.	659
Do.... bed of Grand river .....	.....	645

Station.	Authority.	Elevation above mean ocean level.
		<i>Feet.</i>
Brechin.....	T. & N. R. R.....	757
Brecon.....	Great Western R. R.....	900
Brentwood.....	Northern R. R.....	647
Breslau.....	Grand Trunk R. R.....	1,025
Brigden.....	Canada Southern R. R.....	636
Bright.....	Grand Trunk R. R.....	1,041
Brighton.....	Grand Trunk R. R.....	304
Britannia Mills.....	Grand Trunk R. R.....	222
Brookville.....	Grand Trunk R. R.....	281
Brompton Falls.....	Grand Trunk R. R.....	471
Bronté.....	Great Western R. R.....	346
Brookfield.....	Canada Southern R. R.....	610
Brooklin.....	Midland R. R.....	537
Brucefield.....	Great Western R. R.....	890
Brussels.....	W., G. & B. R. R.....	1,122
Buckingham.....	Q., M., O. & O. R. R.....	183
Barford.....	Great Western R. R.....	844
Burlington.....	Great Western R. R.....	340
Do.....	H. & N. W. R. R.....	253
Do..... Beach (Ocean House).....	H. & N. W. R. R.....	255
Do..... (G. W. R. R. crossing).....	H. & N. W. R. R.....	318
Buxton.....	Canada Southern R. R.....	602
Carlton.....	Grand Trunk R. R.....	406
Do..... (sand and gravel bed).....	T., G. & B. R. R.....	407
Caledon (sand bed near).....	H. & N. W. R. R.....	942
Camalachie.....	Grand Trunk R. R.....	649
Campbellford.....	Midland R. R.....	507
Campbellville.....	Credit Valley R. R.....	929
Canaan.....	O. & Q. R. R.....	648
Canfield (G. T. R. R. crossing).....	Canada Southern R. R.....	621
Do..... junction crossing.....	Grand Trunk R. R.....	616
Cannington.....	T. & N. R. R.....	846
Centralia.....	Great Western R. R.....	867
Chandière Curve.....	Grand Trunk R. R.....	229
Charing Cross.....	Canada Southern R. R.....	628
Charleston (gravel bed near).....	T., G. & B. R. R.....	1,367
Chatham.....	Great Western R. R.....	598
Chatsworth (gravel beds).....	T., G. & B. R. R.....	944
Clandeboyne.....	Great Western R. R.....	888
Claremont.....	O. & Q. R. R.....	885
Clear lake.....	O. & Q. R. R.....	610
Clifford.....	W., G. & B. R. R.....	1,234
Clinton.....	Great Western R. R.....	919
Do.....	Grand Trunk R. R.....	921
Coaticoke.....	Grand Trunk R. R.....	1,007
Cobocenk.....	T. & N. R. R.....	847
Cobourg.....	Grand Trunk R. R.....	297
Colborne.....	Grand Trunk R. R.....	322
Colchester.....	Canada Southern R. R.....	611
Collingwood.....	H. & N. W. R. R.....	589
Do.....	Northern R. R.....	590
Colwell junction.....	Northern R. R.....	750
Comber.....	Canada Southern R. R.....	604
Compton.....	Grand Trunk R. R.....	734
Cook's Station.....	Grand Trunk R. R.....	643
Cooksville (gravel).....	Credit Valley R. R.....	393
Copetown.....	Great Western R. R.....	749
Corinth.....	Great Western R. R.....	769
Cornell.....	Canada Southern R. R.....	797
Cornwall.....	Grand Trunk R. R.....	192

Station.	Authority.	Elevation above mean ocean level.
		<i>Feet.</i>
Gowan	Northern R. R.	819
Gowanstown	W., G. & B. R. R.	1,285
Granton	Grand Trunk R. R.	1,034
Gravenhurst	Northern R. R.	819
Grenville	Q., M., O. & O. R. R.	210
Grimsby	Great Western R. R.	287
Guelph	Great Western R. R.	1,038
Do	W., G. & B. R. R.	1,078
Hagersville	Canada Southern R. R.	740
Hamburg	Grand Trunk R. R.	1,127
Hamilton	Great Western R. R.	255
Do.. (Wentworth st. south)	H. & N. W. R. R.	377
Do.. (Barton st.)	H. & N. W. R. R.	277
Do.. (Wentworth st. north)	H. & N. W. R. R.	266
Harley	Great Western R. R.	837
Harrisburg junction	Great Western R. R.	734
Do.... junc. (with main line G. W. R. R.)	W., G. & B. R. R.	734
Do.... (track)	Great Western R. R.	734
Harriston	T., G. & B. R. R.	1,246
Do	W., G. & B. R. R.	1,264
Harwick	Canada Southern R. R.	651
Hastings	Midland R. R.	635
Hawtrey	Canada Southern R. R.	786
Hawkestone	Northern R. R.	779
Hayden's Corners	Midland R. R.	349
Henfrye	W., G. & B. R. R.	1,166
Hespeller	Wellington, Gray & Bruce R. R.	942
Hensall	Great Western R. R.	899
Highgate	Canada Southern R. R.	739
Hillsburg junction	Credit Valley R. R.	1,424
Holland landing	Northern R. R.	743
Hull	Q., M., O. & O. R. R.	185
Hyde Park junction	Great Western R. R.	886
Ilderton	Great Western R. R.	937
Innerkip	Credit Valley R. R.	972
Ingersoll	Great Western R. R.	879
International bridge	Grand Trunk R. R.	588
Inwood	Canada Southern R. R.	691
Iona	Canada Southern R. R.	745
Iroquois	Grand Trunk R. R.	243
Jarvis	Great Western R. R.	701
Do.. Loopline crossing	H. & N. W. R. R.	699
Jordan	Great Western R. R.	311
Kempfenfeldt	Northern R. R.	757
Kemptville	St. L. & O. R. R.	291
Kenilworth	T., G. & B. R. R.	1,486
Kinloss	W., G. & B. R. R.	1,046
King	Northern R. R.	955
Kingsey	Grand Trunk R. R.	444
Kingstown	Grand Trunk R. R.	274
Kinkardine	W., G. & B. R. R.	590
Kirkfield	T. & N. R. R.	892
Kleinburg	T., G. & B. R. R.	715
Komoka	Great Western R. R.	81
Do.. junction	Great Western R. R.	822
Lachute	Q., M., O. & O. R. R.	225
Lake Simcoe	Northern R. R.	722
Lake Saint Louis		66, 75
Lambton	Credit Valley R. R.	412

Station.	Authority.	Elevation above mean ocean level.
		<i>Feet.</i>
Lancaster	Grand Trunk R. R.	165
Lansdowne	Grand Trunk R. R.	334
Lefroy	Northern R. R.	779
Lennoxville	Grand Trunk R. R.	500
Lethbridge	Northern R. R.	756
Lewisville	Great Western R. R.	615
Limehouse	Grand Trunk R. R.	1,057
Do... siding	Grand Trunk R. R.	1,094
Lindsay	Midland R. R.	851
Lisgar	Grand Trunk R. R.	529
Listowel	W., G. & B. R. R.	1,263
Londesburg	Great Western R. R.	974
London	Grand Trunk R. R.	815
Do... Richmond street	Great Western R. R.	806
Do... Thames river, bed	Great Western R. R.	754
Longford	Northern R. R.	736
Longwood	Great Western R. R.	752
Lucan	Grand Trunk R. R.	991
Lucknow	W. G., & B. R. R.	910
Luther	T., G. & B. R. R.	1,544
Lyn	Grand Trunk R. R.	286
Lynden	Great Western R. R.	757
Lyster	Grand Trunk R. R.	446
Madoc	Midland R. R.	584
Maitland river (bed)	Great Western R. R.	942
Mallorytown	Grand Trunk R. R.	336
Malton	Grand Trunk R. R.	550
Mandamin	Great Western R. R.	647
Manilla	Midland R. R.	955
Markdale	T., G. & B. R. R.	1,359
Markham	T. & N. R. R.	640
Mariposa (clay ridge opposite)	Midland R. R.	884
McGowan's lake	O. & Q. R. R.	571
Meadsville	Credit Valley R. R.	566
Meaford	Northern R. R.	674
Melbourne	Canada Southern Railway	735
Michigan Air line junction	Grand Trunk R. R.	723
Midland junction	T. & N. R. R.	881
Mildmay	W., G. & B. R. R.	1,030
Mile End	Q., M., O. & O. R. R.	225
Millbrook	Midland R. R.	775
Do... junction	T. & N. R. R.	772
Millikins	T. & N. R. R.	651
Milton	H. & N. W. R. R.	661
Do	Credit Valley R. R.	663
Mimico	Great Western R. R.	307
Minessing	Northern R. R.	619
Mitchell	Grand Trunk R. R.	1,122
Moir	Midland R. R.	519
Montreal (crossing Wellington street)	Grand Trunk R. R.	51
Do... (Hochelaga street and Mon- tréal avenues)	Q., M., O. & O. R. R.	20
Montreal (Point St. Charles)	Grand Trunk R. R.	51
Do... (center of Victoria bridge)	Grand Trunk R. R.	115
Do... (St. Lawrence river, beneath Victoria bridge)	Grand Trunk R. R.	333
Montebello	Q., M., O. & O. R. R.	172
Moorefield	W., G. & B. R. R.	1,351
Moore's Mine	Midland R. R.	785
Mount Forest	T., G. & B. R. R.	1,350

Station.	Authority.	Elevation above mean sea level.
Mount Pleasant	Great Western R. R.	810
Mount Vernon	Great Western R. R.	837
Muddy Branch	Q., M., O. & O. R. R.	852
Muirkirk	Canada Southern R. R.	725
Muskoka Lake	Northern R. R.	747
Newbury	Great Western R. R.	702
Newcastle	Grand Trunk R. R.	296
New Haven	Grand Trunk R. R.	659
New Market	Northern R. R.	772
Newry	W., G. & B. R. R.	1,204
Newtonville	Grand Trunk R. R.	294
North Hastings Junction	Midland R. R.	515
Norval	Grand Trunk R. R.	819
Norwich	Great Western R. R.	814
Nottawa	H. & N. W. R. R.	707
Oakville	Great Western R. R.	340
Oil City	Canada Southern R. R.	663
Onondaga	Grand Trunk R. R.	664
Orangeville	Credit Valley R. R.	1,358
Do	T., G. & B. R. R.	1,398
Do junction	T., G. & B. R. R.	1,616
Orillia	Northern R. R.	720
Oshawa	Grand Trunk R. R.	333
Ottawa	St. L. & O. R. R.	123
Owen Sound	T., G. & B. R. R.	586
Page	T., G. & B. R. R.	1,283
Paisley	W., G. & B. R. R.	776
Palmerston	W., G. & B. R. R.	1,314
Papineauville	Q. M. & O. R. R.	155
Paris	Great Western R. R.	842
Parkhill	Grand Trunk R. R.	663
Penetanguishene	Northern R. R.	587
Perch	Grand Trunk R. R.	595
Perry	Canada Southern R. R.	590
Perrytown	Midland R. R.	652
Porth	O. & Q. R. R.	431
Peterboro'	T. & N. R. R.	650
Petersburgh	Grand Trunk R. R.	1,211
Phelpston	Northern R. R.	724
Pinkerton	W., G. & B. R. R.	861
Point Clair	Grand Trunk R. R.	109
Pointe au Chene	Q., M., O. & O. R. R.	188
Pontypool	O. & Q. R. R.	1,004
Port Colborne	Grand Trunk R. R.	581
Do	Welland R. R.	586
Port Elgin	W., G. & B. R. R.	675
Port Hope	Grand Trunk R. R.	287
Port Huron	Grand Trunk R. R.	588
Port Perry	Midland R. R.	839
Port Robinson	Welland R. R.	569
Port Stanley (level Lake Erie)	Great Western R. R.	574
Port Union	Grand Trunk R. R.	266
Prescott	Grand Trunk R. R.	310
Do junction	Grand Trunk R. R.	303
Preston	Wellington, Gray & Bruce R. R.	927
Princeton	Great Western R. R.	932
Proton	T., G. & B. R. R.	1,613
Point Levi (opposite Quebec)	Grand Trunk R. R.	14
Quay's	Midland R. R.	481
Richby	Grand Trunk R. R.	819

Station.	Authority.	Elevation above mean ocean level.
		<i>Feet.</i>
mond	Grand Trunk R. R.	391
mond Hill (gravel pit)	Northern R. R.	847
an	Grand Trunk R. R.	303
etown	Canada Southern R. R.	660
y siding	W., G. & B. R. R.	807
re Baudette	Grand Trunk R. R.	173
ford	T., G. & B. R. R.	912
pass	Northern R. R.	777
wood	Grand Trunk R. R.	1183
ey	Canada Southern R. R.	693
t Agassiz	Grand Trunk R. R.	406
t Anne	Grand Trunk R. R.	124
t Bruno	Grand Trunk R. R.	96
t Catharines	Great Western R. R.	357
Do	Welland R. R.	375
t Clair junction	Canada Southern R. R.	765
t Cyr siding	Grand Trunk R. R.	452
t Hermas	Q., M., O. & O. R. R.	257
t Hilaire	Grand Trunk R. R.	86
t Hulbert's	Grand Trunk R. R.	91
t Janvier	Q., M., O. & O. R. R.	220
t Jerome	Q., M., O. & O. R. R.	311
Do	Q., M., O. & O. R. R.	135
t Julie	Grand Trunk R. R.	475
t Lambert's junction	Grand Trunk R. R.	76
t Madeline's	Grand Trunk R. R.	119
t Mary's	Grand Trunk R. R.	1,083
t Paul's	Grand Trunk R. R.	1,166
t Rose	Q., M., O. & O. R. R.	85
t Scholastique	Q., M., O. & O. R. R.	238
t Thomas	Canada Southern R. R.	766
Do	Great Western R. R.	756
ia	Grand Trunk R. R.	587
Do, water, in Saint Clair river	Grand Trunk R. R.	582
Do, (near Lake Huron)	Great Western R. R.	589
bon's	Northern R. R.	741
boro junction	Grand Trunk R. R.	546
orth	Grand Trunk R. R.	1,009
ingville	Grand Trunk R. R.	1,173
ca (Caledonia)	Grand Trunk R. R.	658
rn	Northern R. R.	725
Do (crossing of plank-road)	H. & N. W. R. R.	653
Do, river	Northern R. R.	711
espeare	Grand Trunk R. R.	1,184
bot lake	O. & Q. R. R.	636
den	Canada Southern R. R.	726
ourne	T., G. & B. R. R.	1,629
broke	Grand Trunk R. R.	486
oe	Great Western R. R.	719
reset	Grand Trunk R. R.	442
hampton	W., G. & B. R. R.	516
h Durham	Grand Trunk R. R.	609
eastern R. R. junction	Grand Trunk R. R.	321
hwold	Canada Southern R. R.	745
gfield	Canada Southern R. R.	796
gford	Great Western R. R.	822
ford	Grand Trunk R. R.	128.25
ner	Northern R. R.	717
ensville	Canada Southern R. R.	589
ing	Midland R. R.	415

Station.	Authority.	Elevation
Stoco lake	O. & Q. R. R.	
Stony Point	Great Western R. R.	
Stoney Creek	Great Western R. R.	
Stonyville	T. & N. R. R.	
Stratford	Grand Trunk R. R.	
Do....(bed of Avon river)	Grand Trunk R. R.	
Strathroy	Great Western R. R.	
Do	Great Western R. R.	
Streetsville	Credit Valley R. R.	
Do....junction	Credit Valley R. R.	
Summit	T. & N. R. R.	
Summit	Midland R. R.	
Sunderland	T. & N. R. R.	
Sunnidale	Northern R. R.	
Tavistock	Grand Trunk R. R.	
Taylor	Canada Southern R. R.	
Tecumseh	Great Western R. R.	
Teeswater	T., G. & B. R. R.	
Thamesville (bed of river)	Great Western R. R.	
Do....bridge	Great Western R. R.	
Thorndale	Grand Trunk R. R.	
Thompson	Northern R. R.	
Thornbury	Northern R. R.	
Thornhill	Northern R. R.	
Thornton	H. & N.W. R. R.	
Thorold	Welland R. R.	
Thurso	Q., M. & O. R. R.	
Tilbury	Canada Southern R. R.	
Tilsonburg	Canada Southern R. R.	
Do....crossing (Canada Southern)	Great Western R. R.	
Toronto	Great Western R. R.	
Do...(Queen st. junction)	T., G. & B. R. R.	
Do	Grand Trunk R. R.	
Do...(Lake Ontario)	Grand Trunk R. R.	
Trenton	Grand Trunk R. R.	
Tweed village	O. & Q. R. R.	
Tyendinaga	Grand Trunk R. R.	
Unionville	T. & N. R. R.	
Upton	Grand Trunk R. R.	
Uxbridge	T. & N. R. R.	
Vaudreuil	Grand Trunk R. R.	
Victoria	Canada Southern R. R.	
Do....junction	Midland R. R.	
Villa Nova	Canada Southern R. R.	
Waldemar	T., G. & B. R. R.	
Walker's	Canada Southern R. R.	
Walkerton	W., G. & B. R. R.	
Wanstead	Great Western R. R.	
Warwick	Grand Trunk R. R.	
Washago	Northern R. R.	
Waterdown	Great Western R. R.	
Waterford	Canada Southern R. R.	
Waterloo	Grand Trunk R. R.	
Waterville	Grand Trunk R. R.	
Watford	Great Western R. R.	
Welland	Canada Southern R. R.	
Do	Welland R. R.	
Weston	Northern R. R.	
Whitby	Grand Trunk R. R.	
Do	Midland R. R.	

Station.	Authority.	Elevation above mean ocean level.
		<i>Feet.</i>
.....	Grand Trunk R. R.	682
.....	T. & N. R. R.	856
sford	T., G. & B. R. R.	1,212
r, Ontario.....	Great Western R. R.	582
, Quebec.....	Grand Trunk R. R.	420
m	Canada Southern R. R.	817
m	Great Western R. R.	1082
.....	Great Western R. R.	285
on	Credit Valley R. R.	962
idge	T., G. & B. R. R.	558
e	Canada Southern R. R.	619
ock	Credit Valley R. R.	947
.....	Great Western R. R.	957
lle	T. & N. R. R.	896
..junction.....	Midland R. R.	897
e	Northern R. R.	772
ig	Great Western R. R.	712
a river-bed	Grand Trunk R. R.	65
e	Northern R. R.	672
e	O. & Q. R. R.	406

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